THE BOOK WAS DRENCHED

PAPERS RELATING TO POLITICAL ECONOMY

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PAPERS RELATING TO POLITICAL ECONOMY

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The Scope and Method of Political Economy. By John Neville Keynes, M.A. (London: Macmillan & Co.), 1891.*

Mr. Keynes' first laurels were won in the comparatively barren field of formal logic. He has now obtained an equally brilliant triumph by an attack on the most arduous part of the material or inductive logic.

It used to be true, according to Bagehot, of books relating to currency that the first question asked, perhaps the only curiosity felt by most readers, was directed to the Bank Act of 1844: was the author for or against that measure? With equal truth it may be said that interest in a work relating to the methods of Economics centres round the issues raised in recent years by the writers who have revolted against the abuse of abstract dogmas. We once heard the question put to a lecturer: "Are you in favour of the Old or the New Political Economy?" "I am in favour of the true Political Economy," the person thus interrogated replied with sufficient readiness. We imagine that Mr. Keynes' answer to a question which had better not be asked would be very similar. "The method of political economy cannot adequately be described by any single phrase," he says justly. The Hallam of methodologists, he gives complete satisfaction to the partisans of neither extreme.

"No one method will be advocated to the entire exclusion of other methods. . . .

"If pure induction is inadequate, pure deduction is equally inadequate. It is a mistake, that is only too common, to set up these methods in mutual opposition, as if the employment of either of them excluded the employment of the other. It is on the contrary by their unprejudiced combination alone that any complete development of economic science is possible. For, as Professor Cohn remarks, all induction is blind, so long as the deduction of causal connection is left out of account; and all deduction is barren, so long as it does not start from observation."

This we hold to be the right faith concerning the double nature of economic method: in a just mean between the monophysite heresies at each extreme. It is significant that Mr.

* When the date of the book reviewed is not given in the review the date of the review is printed in this volume outside—not, as otherwise, within—brackets.

Keynes illustrating this doctrine should have cited Professor Cohn, whose name is sometimes associated with a one-sided historical sect. The dicta and examples of Professors Cohn, Roscher, Wagner, and other eminent Germans cited by Mr. Keynes, attest the justice of the following observations :—

"We must not . . . exaggerate the opposition between what may be called the classical English school and the new school. . . . The difference is strictly speaking one of degree only; and we find the opposition reduced to a minimum when we compare the actual procedure in the solution of given problems adopted by the best contemporary economists, whether they profess to belong to the new school, or are content to be classed with the old."

Contemplating separately the two functions of inductive reasoning—so far as it is possible to distinguish in consideration processes that are inextricably intertwined in action—we may first observe that Mr. Keynes in his analysis of the Deductive Method very correctly grounds abstract reasoning on what may be called "hypotheses" : in much the same sense as geometrical axioms have been so called. A perfectly straight line nowhere exists, says Mill; and the rigidity of the "economic man" is even more hypothetical. At the same time it is not to be supposed that the hypotheses rests upon nothing. The hypothesis of the "economic man," is not, in the present state of society, as arbitrary as the hypothesis which might be entertained of a perfectly altruistic man. You could not say of these two assumptions that they were equally true or false and equally useful.

But, though the foundations of abstract reasoning do not rest upon nothing, they are seldom strong enough by themselves to sustain practical conclusions. To complete the supporting arch there is needed the consilience of specific experience. Mr. Keynes has surveyed with equal eye both parts of the scientific structure. The importance of ascertaining facts, the value of "history" in the wider Greek sense, is not underrated by him. He points out how history of bygone times is useful in illustrating and confirming economic theories. He holds, indeed, that "deduction from elementary principles of human nature also finds some place in the argument." But not in every case; for it is not true "that economic history never provides premisses for the economist or forms the basis of his doctrines."

But, while thus rendering to specific experience the things which belong to her province, Mr. Keynes gives no countenance to the pretensions of a one-sided "Historismus." "Mere description," he justly says, "cannot constitute a science; and

political economy has no purely classificatory stage, such as will enable it to be compared with sciences of the type of zoology and botany." The complex problems of political economy cannot be successfully attacked without what Professor Marshall has called "a special organon." As Bagehot, quoted approvingly by Mr. Keynes, has said—

"If you attempt to solve such problems without some apparatus of method, you are as sure to fail as if you try to take a modern military fortress—a Metz or a Belfort—by common assault. You must have guns to attack the one, and method to attack the other."

In one respect, perhaps, it might appear at first sight that Mr. Keynes has shown some partiality to the deductive school. He not only, after Mill, Cairnes, Professors Sidgwick, Dunbar, Wagner, and the majority of considerable writers on the subject, extols deductive reasoning, but also, going beyond those writers, ranks high that species of deduction which is effected through the channels of mathematical conceptions. We submit, however, that this course is less prejudicial than may appear at first sight to the claims of the "practicals," as Mill calls the party opposed to the *a priorists*. The generalisations of mathematical theory, are so manifestly abstract and in so high a degree idealised as to run no risk of having their hypothetical character mistaken. Unlike the middle axioms which are expressed in familiar terms, the higher theory, to which symbolic and diagrammatic statement is appropriate, cannot be suspected of being immediately applicable to practice. The former statement might be compared to a district map which affords, indeed, some guidance to the wayfarer, but may easily lead him out of the path if not supplemented by local inquiry. Whereas the mathematical method is like the map of a kingdom or the world; the pedestrian who attempted to guide his steps by such a chart would be, not only a wayfaring man, but a fool. These reflections have been suggested to us by some remarks made by Professor Foxwell, to which Mr. Keynes refers with approbation.

That Mr. Keynes has no partial bias in favour of mathematical reasoning may be inferred from the discussion of statistics in relation to political economy, which occupies his concluding pages. For he has not even alluded, so far as we have observed, to what may be called the mathematical method of statistics, the use of the theory of errors in eliminating chance. The omission may be justified partly by the fact that statistics are treated only incidentally in Mr. Keynes' work; partly on

the tenable supposition that the higher mathematics play a more important part in what may be called the analytical, than the statistical, side of social science. It is true that, as Mr. Keynes points out, the rôle of mathematical science in political economy is to afford only regulative ideas, rather than numerical results such as the physicist has a right to expect. But then, in political economy, that indirect use extends over a wide sphere, whereas the points in social statistics, where the mathematical method is applicable, are comparatively few. For it is generally better to attain certainty by augmenting observations, rather than by a nice use of the theory of errors to extract the utmost degree of probable evidence which may be afforded by a limited number of observations. The statistician is generally in the position of the American farmer, whom it pays better to extend his farm rather than to cultivate very highly a comparatively few acres.

Mr. Keynes seems, therefore, justified in directing his attention to the logical, rather than the mathematical side of statistics. He gives useful instances of the fallacies to which induction, based upon figures, is liable—what the late Mr. Sargant emphatically called "the lies of statistics."

This part of the work should be read in connection with the remarks on the methods of induction which occur earlier. A rich vein of logical reflection runs through the whole work; sometimes, as it were, visible on the surface, expressed legibly in the text, and sometimes requiring to be mined from abstruse footnotes. The principle of this variety of strata is not very evident. Why, for instance, should the valuable remark of Professor Cohn on the use of deduction, which we have already quoted, be placed in the text, while the strained eye must seek in a footnote for the following equally valuable remark, which we are glad to have an opportunity of quoting? "The idea that mere collections of historical and statistical material can be made available for science without deductive aids, is just as much an extravagance as the opposite idea that out of deductions from elementary hypotheses the whole science can be constructed."

Of the numerous logical discussions to which we have referred may be specially noted those which relate to the method of difference, and the use of definition in political economy. In treating these and cognate topics the author has not aimed at producing surprise and entertainment by brilliant paradoxes, but rather at co-ordinating and occasionally supplementing the logical principles which Mill and the later economists who have treated of economic method have laid down. The relation

of Mr. Keynes' *Scope and Method of Political Economy* to the classical writings on that subject is much the same as the relation of his *Formal Logic* to the treatises of Aristotle and Boole—not equally original, but perhaps better adapted to the purposes of education.

We trust that Mr. Keynes' later logical treatise may also resemble his earlier one in its popularity. We could wish for it indeed a monopoly of favour, and such finality as in political economy is attainable. For we cannot conceal a certain impatience at the continual reopening of a question on which authorities appear to be substantially, if not in phrase, agreed. As it is forcibly said by one of Mr. Keynes' predecessors, Mr. Edward C. Lunt, in his brilliant study on *The Present Condition of Economic Science*, "sensible men long ago dropped the controversy and went about their business, careless as to whether their methods were called 'historical' or 'orthodox.'"

Principles of Economics. BY PROFESSOR ALFRED MARSHALL. Vol. I. Second Edition. (Macmillan & Co.), 1891.

IN the preface to the second edition of this volume its author tells us :—"To myself personally, the chief interest of the volume centres in Book V.: it contains more of my life's work than any other part; and it is there more than anywhere else that I have tried to deal with unsettled questions of the science." The import of this confession will be understood when it is observed that the book thus referred to consists partly of the mathematical theory of Supply-and-Demand, and partly of the almost equally severe reasoning applied specially to Supply, which in the first edition formed the subject of a separate book, entitled *Cost of Production*. The rearrangement according to which an extra book is no longer devoted to production appears conformable to the "symmetry of the relations in which demand and supply stand to value." This symmetry is justly regarded by Professor Marshall as "fundamental." While others have been disputing whether it is cost-of-production or final-utility which determines value, he has discerned that it is both. His predecessors have tilted against each other from opposite sides of the shield of truth: he alone has surveyed with equal eye both the gold side, which most attracted Ricardo, and the silver side, on which Jevons fixed too exclusive attention. An able champion of that one-sided theory which is at present most in vogue has compared the point at issue to the question—a question,

it is implied, admitting of only one answer—whether it is the sun which revolves round the planets or the planets round the sun. To a mind of a mathematical cast like Professor Marshall's, it is quite intelligible that of two bodies one does not revolve round the other more than the other round the one.

"Just as the motion of every body in the solar system affects and is affected by the motion of every other, so it is with the elements of the problem of political economy."

These words were written by Professor Marshall nearly twenty years ago;[1] but their spirit still pervades his most recent utterances.

The want of the appropriate mathematical conceptions is not the only cause of the too common reluctance to accept the doctrine of the double nature of value. A difficulty also is presented by that which, according to Professor Marshall, is "the centre of the chief difficulty of every economic problem"—the element of time. The forces of utility and disutility do not always act simultaneously, as in the simple case "where a person satisfies one of his wants by his own direct action, as, for instance, when he picks blackberries," up to the point when "the task of picking begins to cause weariness, which at last counterbalances the desire of eating, and equilibrium is reached." Very generally the correspondence between value and efforts-and-sacrifices is the result of motives whose object is distant—such as the net advantages of an occupation for which a parent educates his son. Accordingly, the sect of economists who subordinate the principle of cost to that of utility are right so long as they confine attention to single markets and short periods. The critics of Ricardo, and the more damaging caricaturists who represent themselves as his followers, are mistaken if they expect that value should follow cost into each particular transaction with the precision of a Labour-Exchange, such as half-taught enthusiasts have imagined. Not only a "long period," but a stationary state would be required for the complete establishment of equilibrium between cost and value. But the state of industry is never stationary, "the economic conditions of the country are constantly changing, and the point of adjustment of normal demand to normal supply is constantly shifting its position. There are, indeed, constant tendencies towards that point as surely as, to use an old simile, there is a constant tendency of the surface of the sea towards a position of rest; but the moon and the sun are always shifting their places, always therefore

[1] In a review of Jevons' *Theory* in the *Academy*, April, 1872.

changing the conditions by which the equilibrium of the sea is governed; and meanwhile there are ceaseless currents of the raging winds; the surface is always tending towards a position of normal equilibrium, but never attains it." We regret that the author has omitted this splendid passage from the second edition. He was perhaps deterred by the difficulty of conveying through any physical analogy the distinction between the "long" and "short periods" in which the effects of economic forces may be worked out. We should have indeed to suppose the attraction of the "moon and the sun," in contrast to the terrene forces, to occupy a considerable time in being propagated to the surface of the sea!

The attraction of distant objects playing so large a part in the mechanics of industry, it concerns us to study the law of that attraction. The formula, precise as that of gravitation, is the inverse, or rather negative exponential. "If h be the future amount of a pleasure of which the probability is p, and which will occur, if at all, at time t; and if $R=1+r$ [where r is "the rate of interest per annum, which must be added to a present pleasure in order to make it just balance a future pleasure"], then the present value of the pleasure is phR^{t}" (Mathematical Appendix, Note V., Second Edition). Some additional paragraphs in the new edition render this theorem more easy of reception. The same conclusion as before is reached, but less abruptly. The guide now smooths a winding path, where before the ascent was made by a few footholes, difficult for inexpert climbers. We confess to having been among those who slipped. There is now a more explicit statement of the assumptions which we make in order to "get an artificial measure of the rate at which he [a person] discounts future pleasures." The first is: "that he expects to be about as rich at the future date as he is now" (Second Edition, p. 179). Attention also is called to the "importance of drawing a clear distinction between discounting a future pleasure and discounting the pleasure derived from the future enjoyment of a certain amount of a commodity" (*ibid.*). Again, it is to be noted that the theorem "is so worded as to be applicable to all pleasures, and not merely to marginal pleasures, to which some writers have proposed to limit its application" (*ibid.*, p. 617). These points being borne in mind, together with some reservations introduced in the mathematical note referring to the subject (Appendix, Note V.), it will be found on consideration that the exponential law of hedonic perspective is justified—with respect to those pleasures

at least of which the external sources are exchangeable. We do not understand that the law is predicated of those pleasures which are derived from non-transferable objects; or out of relation to a money-market. As we interpret, the "man who builds a house for himself," in an important passage of the fifth book (chap. iv. page 1), is not a Robinson Crusoe. That "the motive force tending to deter him from building the house would be his estimate of the aggregate of these efforts [the efforts required for building on any proposed plan], the evil or discommodity of each being increased in geometrical proportion (a sort of compound interest), according to the corresponding interval of waiting," is theoretically true of an economic regime, but not in what may be called unconditioned psychology or pure hedonics.

The consideration of motives acting at different distances of time leads to the discrimination between Rent and Quasi-rent—a distinction which perhaps will prove as important as the discovery of the principle of rent itself. It is now perceived that there is a portion of truth in the contention of the Socialist that the profits of the capitalist have a certain analogy to the rent of the landlord. But he is stopped when he proceeds to draw the corollary that the unearned increment may in both cases with like justice and expediency be appropriated by the community. "The sudden appropriation of Rents and Quasi-rents by the State would indeed have very similar effects in destroying security and shaking the foundations of society; but, if from the first the State had retained true Rents in its own hands, the vigour of industry and accumulation need not have been impaired; and nothing at all like this can be said of Quasi-rents." The eternal verity of the Ricardian theory is enhanced by Professor Marshall's re-statement—like the "original and indestructible powers" of a soil upon which a new and splendid edifice has been erected. Indeed upon this topic and others the *Principles of Economics* may be regarded as a second approximation to truths with respect to which a first approximation was sufficient for Ricardo. The work before us is a signal example of "the abandonment of dogma, the development of analysis," which the author, in a striking passage added to the chapter on the growth of economic science, attributes to contemporary, in contrast to the older, economists. "The change may perhaps be regarded as a passing onward from that early stage in the development of scientific method in which the operations of Nature are represented as conventionally simplified

for the purpose of enabling them to be described in short and easy sentences to that higher stage in which they are studied more carefully and represented more nearly as they are, even at the expense of some loss of simplicity and definiteness." We may couple this reflection with the new remarks in the following chapter on the difference between Comte and Mill as to the utility of an independent science of economics. "What is wanted is a general principle which shall determine the point in the widening of the scope of economics at which the growing loss of scientific precision would begin to outweigh the gain of increasing reality and philosophic completeness." We submit that our author has hit this point of maximum advantage better than if he had loaded his already weighty pages with all the details of law and industry, the absence of which an eminent German critic, otherwise favourable, has regretted.

The "fundamental symmetry" between the action of supply and demand, to which we have referred as a conspicuous feature of the *Principles of Economics,* is brought out by the author with additional clearness through some alterations in the last book, of which we are told in the preface that "they aim at emphasising and defining more fully the distinguishing characteristics of the broad problem of Distribution, as contrasted with questions relating to the values of particular things; and at showing more clearly how, though the causes that govern demand and those that govern supply can be studied separately in the case of any single commodity, yet this cannot be done for the Agents of production as a whole." Rehandling the complexities of Distribution, the author practises, while he explains, the "law of Substitution"; combining the apparatus of symbols with the more familiar media of exposition in such proportions as may give the best result. What he says of material production is true also of the art of exposition. "No two persons pursuing the same aims will adopt exactly the same routes." There are those who would prefer to employ more copiously the terminology of the calculus, the conception of a function and its variations, in stating the theorem that "the limit or margin at which the use of any one of these agents of production terminates, and the aid of another is substituted for it in any branch of production is found where the relative efficiency of these two agents are proportionate to their relative costs"; or the proposition still more liable to misunderstanding, that free competition tends in the direction of making each man's wages equal to the *net product* of his own labour." We should observe,

however, that the mathematical version of these theories has been made fuller. The principle on which we proceed in order to "find the marginal investments of each kind of labour for each kind of use" is stated more explicitly. In Note XIV. (Second Edition), from which we have just quoted, there is added the pregnant clause, "they may all [all the equations employed to find the marginal investments] be regarded as mathematically contained in the statement that $H—V$ [the net advantages] is to be made a maximum." In the light of the general theory of economic equilibrium which is thus indicated, how trivial appears the dispute whether it is utility or cost which determines normal value! You might as well ask, given a system of simultaneous equations involving two unknown quantities x and y (or two sets of unknown x_1, x_2, x_3, etc., y_1, y_2, etc.), whether x or y contributed more to the solution.

There is a "fundamental symmetry" between the forces of supply and demand; but there are superficial contrasts. "The normal value of everything . . . rests like the keystone of an arch, balanced in equilibrium between the contending pressures on its two opposing sides. The forces of demand press on the one side, those of supply on the other; and the older economists seem to have been rightly guided by their intuitions when they silently determined that the forces of supply were those the study of which was the more urgent, and involved the greater difficulty." The partiality of the older economists has produced a reaction which it is to be feared "may cause the importance of wants to be over-estimated relatively to activities" (Preface to the Second Edition). There is therefore inserted a new chapter, "Wants in Relation to Activities," directed against Jevons' position that the "theory of consumption is the scientific basis of economics."

Another peculiarity distinguishing Supply is the special difficulty which the Law of Increasing Returns presents. This difficulty is stated more prominently in a new paragraph at the beginning of the chapter treating of "Business Management as a part of Industrial Organisation" (Book IV. chap. xii. § 1), and removed more completely in a re-written chapter treating of the "Modes of Action of the Law of Increasing Return," and cognate topics (Book V. chap. xi.). Much additional light is thrown upon these subjects by a new note (p. 483) distinguishing more explicitly than in the first edition the "true supply curve," which relates only to "long periods" from another construction proper to short periods. The latter "has attractions, and may

perhaps ultimately be of service; but it requires careful handling, for the assumptions on which it rests are very slippery." The question now recurs in the case of a commodity obeying the Law of Increasing Return, why should not the large manufacturer drive out his rivals? Why should not the producer by "doubling his production" increase very much his economies, and marketing his outputs on nearly the same terms as before more than double his profits? The reason is that there are not many industries obeying the Law of Increasing Return in which the producer has equally good access to the whole of a large market. "When we are considering an individual producer we must couple his supply curve—not with the general demand curve for his commodity in a wide market—but with the particular demand curve of his own special market." In the case of industries to which this limitation does not apply it often happens that the tendency of large firms to drive out small ones has already gone so far as to exhaust most of the strength of those forces by which it was originally promoted. There remain, however, a few industries to which neither of these explanations applies. Such industries are "in so transitional a state that for the time there is nothing to be gained by trying to apply the statical theory of equilibrium of normal demand and supply to them." In fact, the mathematical method, which has so long been our guide, appears to break down at this stage, and we are left to the hope of such future improvement in our analytical methods as may enable us to cope with the complex phenomena of "organic growth" (p. 496).

We should convey an erroneous impression of the reissued work if we dwelt altogether on its abstract side. The predilection which the author, in a passage above quoted, expresses for that part is not exclusive. His interest "is centred in Book V."; but its circumference circles humanity. He frequents the highlands of the subject; but not for the mere pleasure of an intellectual chase. From the heights of abstraction unexpected views of the way of conduct are obtained; and the paths of fallacy are exposed. The readers of the first edition will remember how from aerial speculations about the Law of Increasing Returns new limits of the practical principle of *laissez-faire* were discerned. It was shown that free competition does not necessarily conduce to maximum gain.

But we are now concerned only with the additions and alterations made in the second edition. We should accordingly observe in connection with the Law of Increasing Returns that

the relation of this law to that of decreasing returns is rehandled in the last chapter of the book devoted to "Supply or Production" (Book IV. chap. xiii.). But we do not find that the author has substantially modified his cheerful doctrine, that "improved organisation tends to diminish or even override any increased resistance which Nature may offer to raising increased amounts of raw produce." The older economists used to say that population tended to press upon the means of subsistence; the more careful explaining that the verb "to tend" has a sort of reversible signification. A balloon, it has been said, tends to rise; it also tends to fall. Still it makes a difference whether you emphasise the former or the latter tendency. The statement of the compound law becomes more buoyant when Professor Marshall makes the principal sentence, "An increase of population accompanied by an equal increase in the material sources of enjoyment and aids to production, is likely to lead to a more than proportionate increase in the aggregate income of enjoyment of all kinds"; and places in a subordinate clause the condition: "provided, firstly, an adequate supply of raw produce can be obtained without great difficulty." The second proviso is not characteristic of the older economists: "and [provided], secondly, there is no such overcrowding as causes physical and moral vigour to be impaired by the want of fresh air and light, and of healthy and joyous recreation for the young."

This cheerful prospect should be compared with the view expressed in the last chapter of the volume that the new facilities of transport have much diminished for the present the influence which the Law of Diminishing Return exercises on production. Reconsidering the influence of progress, the author is led to introduce a new term, "the standard of life"—that standard of which the rise implies an "increase of intelligence, and energy, and self-respect." It is distinguished from that standard of comfort which operates only by limitation of population. A consideration of the standard of life leads on to the burning question of a limitation of the hours of labour. We commend the following carefully balanced conclusions to the dogmatists and enthusiasts on both sides of the question. "All this tends to show that a general reduction of the hours of labour is likely to cause a little net material loss and much moral good: that it is not adapted for treatment by a rigid cast-iron system, and that the conditions of each class of trades must be studied separately." "Since adults, whose habits are already formed, are not likely to adapt themselves quickly to long hours of leisure, it would

seem more conducive to the well-being of the nation as a whole to take measures for increasing the material means of a noble and refined life for all classes, and especially the poorest, than to secure a sudden and very great diminution of labour of those who are not now weighed down by their work. . . . It is the young whose faculties and activities are of the highest importance, both to the moralist and the economist." The author of the *Principles of Economics* yields to no utopian Socialist in the ardent desire that the curse of poverty should be remedied. But he is slow to adopt the nostra in which ready writers deal. However anxious for the health of the body economic, he does not rush for the "potent medicines of the charlatan." Before adopting the violent constriction recommended by the quack bonesetter, the skilful anatomist considers what strains will be transmitted through the whole frame. He desires with the desire of an enthusiast that the opportunity of a life worthy of man should be obtained by all; he deliberates upon the means to that supreme end with the cautious sagacity of an economist whose work is probably freer from mistake than any other equally extensive investigation in the most bewildering of the sciences.

The Elements of Politics. By HENRY SIDGWICK. (Macmillan & Co.), 1891.

POLITICS and political economy have more than a name in common. Politics include what Dr. Sidgwick has called "the Art of Political Economy." There are indeed who maintain that the only action of the statesman respecting the production and distribution of wealth is to refrain from action: that the art of political economy is to suppress art. But this unqualified principle of *laissez-faire* is far from Dr. Sidgwick. Even assuming that to maximise the amount of wealth irrespectively of its distribution were the only object, he denies that the policy of let alone would be the best means of realising the end proposed. He brings up again against the position of the extreme individualist the weighty masses of argument which were marshalled in his *Political Economy.* There is first the consideration that "the individualistic argument, even if fully granted, would only justify appropriation to the labourer, and free exchange, of the utilities produced by labour; it affords no direct justification for the appropriation of natural resources." Again, individuals may not be able to remunerate themselves by the sale of utilities which it

is for the general interest that they should render to society, in cases like the following: forests maintained by private landowners who cannot exact any return for the benefit conferred on the community by the favourable influence of the forests upon the climate; or advances in scientific knowledge which are not likely to remunerate the discoverer if treated as marketable commodities. Again, there is the waste of time and trouble in forming business connections which seems inevitable under a competitive system—the sums spent in advertisements and in the promotion of joint-stock companies. Again, in the absence of governmental control the evils of monopoly may become rampant; especially in these days of trusts and combinations. Again, it may be the interest of all shopkeepers to close their shops on Sundays and holidays, provided the closing were universal; but, without the enforcement of that proviso, it may be the interest of a few to steal custom by keeping their shops open; Sunday labour being taken as representative of a class of cases among which our author would perhaps, like Mill (*Political Economy*, Book V. ch. ix. p. 12), include the regulation of the hours of labour. Again, the Government, being financially more stable than private individuals and companies, can give completer security to creditors. Again, it may be profitable to the community to spend public funds on the education of labourers, but not the interest of the labourers themselves or their parents to trench upon a narrow income for a gain so distant. By these and other arguments, stated more fully in his earlier work, Dr. Sidgwick establishes the conclusion thus announced in his particularly lucid Table of Contents: "Abstract theory shows several cases in which the individual's interest does not tend in the direction most conducive to the common interest—even assuming that utility to society is accurately measured by market value." The bourgeois doctrinaire is overthrown even upon the ground which he has himself chosen.

But of course that is a very narrow ground, in which the philosophic mind cannot consent to rest. The end of politics according to Dr. Sidgwick is the greatest quantity, not of wealth, but of happiness. In applying the greatest happiness principle Dr. Sidgwick follows Bentham rather than recent utilitarians. Like Bentham, Dr. Sidgwick derives his precepts from the pure fount of utilitarian first principle, without admixture of turbid elements from alien sources. J. S. Mill, when the question rises why equality should be aimed at, affirms, rather than demonstrates, "the equal claim of everybody to all the means of

happiness" (*Utilitarianism*, p. 93). But Dr. Sidgwick follows Bentham in deducing the equal distribution of wealth from the principle of greatest happiness combined with the law of diminishing utility, to use Jevons' phrase; or what Bentham calls, in a passage quoted by Dr. Sidgwick, the "pathological propositions upon which the good of equality is founded," viz. that *ceteris paribus* "each portion of wealth has as corresponding to it a portion" or rather a "certain chance" of happiness: that "of two individuals with equal fortunes he that has the most wealth has the greatest chance of happiness," but that "the excess in happiness of the richer will not be so great as the excess of his wealth." This reasoning has appeared foolishness to some—too simple for the metaphysician, too moderate for the demagogue [1] —but it is the reasoning of Bentham and Dr. Sidgwick.

The Bentham-Sidgwick argument would lead direct to socialism, but that the measures commonly proposed for equalising wealth are fatal to the other factor of the utilitarian end, quantity of wealth. Dr. Sidgwick is of opinion "that—leaving out of account the disturbance of the transition—the realisation of the collectivist idea at the present time or in the proximate future would arrest industrial progress; and that the comparative equality in incomes which it would bring about would be an equality in poverty:—even supposing population not to increase at a greater rate than the present, as it must be expected to do if work and adequate sustenance were secured to all members of the community, unless measures of a novel kind were taken to prevent the increase." Accordingly, like the Benthamites, Dr. Sidgwick is jealous of the rights of property. He more than once observes that the proposal to confiscate existing vested interests in land is unworthy of serious discussion.

However, he goes so far as to admit "that at least a removal of the extreme inequalities, found in the present distribution of wealth and leisure, would be desirable, if it could be brought about without any material repression of the free development of individual energy and enterprise, which the individualistic system aims at securing." Especially when it is taken into

[1] In a passage of profound ethical and political interest (ch. xxx. p. 2), Dr. Sidgwick says: "I do not think that Bentham, when he said, 'everybody to count for one,' intended to deny (1) that one person may be more capable of happiness than another; or (2) that, if so, the former's happiness is more important than the latter's as an element of general happiness. . . . To aim at equality in distribution of happiness may obviously be incompatible with aiming at the greatest happiness on the whole, if the happiness of one person can ever be increased by diminishing to a less extent the happiness of another already less happy."

account that, as above observed, property in natural resources has upon strictly individualistic principles no direct justification, some expenditure of public money on objects which may be considered socialistic is defensible "so far as this is done without such heavy taxation as materially diminishes the stimulus to industry and thrift of the persons taxed."

It follows that the interposition of Government may be required not only to increase the amount, but also to improve the distribution of wealth. Which motive predominates it is often difficult to decide. Thus the expenditure of public funds in educating the children of the labouring poor both conduces to efficiency of labour and promotes the equality of opportunity. No handy rule, no simple method for weighing the evils and advantages of governmental action, can be given. "I do not think that any general rules can be laid down for determining the limits of such interference: all we can say is that a milder degree of interference, if effective, is generally to be preferred." For example, with respect to "the burning question of Free Trade," it is not to be denied that it may be economically gainful to a country to resist by import duties an industrial change which might lead to the emigration of its population and wealth; and to introduce an industrial change by protecting young industries. But, as such cases are practically rare, upon the whole it is concluded that modern states had better refrain from attempts to protect native industry, "not because it is impossible that such protection, if judiciously introduced and limited, might not be occasionally advantageous to the protecting country, but because a really judicious protection of native industry implies a wisdom and strength on the part of government which we cannot practically expect to obtain." Retaliatory duties are even less amenable to general rule: how far they may be advisable is "not a question to which a general theoretical answer is possible."

We have been considering governmental regulation with reference both to production and distribution. But is not the sum total of happiness, the end of government, a function of the number of population as well as of the amount and distribution of wealth? What says the author of the *Methods of Ethics?* We shall find that under this head another large debt is incurred by political economy to ethics, through the agency of Dr. Sidgwick.

Discoveries are hardly possible in ethics, practical principles have grown slowly; but we hold that the nearest approach to

an absolutely new idea of first-rate importance in morals was made by the following momentous passage which occurs in the fourth book of the *Methods of Ethics* (ch. i.): "Political economists of the school of Malthus often appear to assume that no increase of numbers can be right which involves any decrease in average happiness. But if we take Utilitarianism to prescribe, as the ultimate end of action, happiness on the whole, and not any individual's happiness, unless considered as an element of the whole, it would follow that, if the additional population enjoy on the whole positive happiness, we ought to weigh the amount of happiness gained by the extra number against the amount lost by the remainder. So that, strictly conceived, the point up to which, on Utilitarian principles, population ought to be allowed to increase, is not that at which average happiness is the greatest possible, but that at which the product formed by multiplying the number of persons living into the amount of average happiness reaches a maximum."

Bentham was not led to regard the "lot of happiness" enjoyed by a nation as a function of the number of population considered as variable. J. S. Mill was so preoccupied by the evils of over-population as hardly to have indicated whether there is an opposite extreme. "Even, if innocuous, I confess I see very little reason for desiring it," he says with respect to the increase of population. Cantillon, indeed, had stated, but did not attempt to answer the question, "whether it is better to have a large population poor and without comforts, or a smaller population with more affluence; a population of a million consuming the produce of six acres (*arpents*) per head, or of four millions, each living on an acre and a half." And Cournot, in his later writings, had pointed to the insolubility of such questions as the rock on which economic optimism foundered. But the question is not regarded as unanswerable, nor is it left unanswered, by Dr. Sidgwick. "I regard," he says, "the increase of the amount of human life in the world under its present conditions of existence in civilised countries, as a good and not an evil." Accordingly "in the present condition of the world" he would disapprove of measures tending to restrict the growth of population. As we interpret, Dr. Sidgwick, like Aristotle, would regard according to circumstances at one time the expansion, at another the contraction of population expedient. But in the present state of the world he is not prepared to move in either direction.

When we compare Dr. Sidgwick with other eminent writers, ancient and modern, who have maintained the desirability of a

large population, it is to be noticed that this object is sought by him as good in itself, part of the utilitarian end, not for the sake of defence against, or competition with, foreign nations. But these latter considerations, rather than what is "a benefit to humanity" (p. 305), have perhaps the first claim on the attention of the statesman; being must be secured before well-being. Now there is likely to be a difference between that degree of populousness which is in the utilitarian mean between excess and deficiency, and that degree which is prescribed by the exigencies of military and commercial rivalry, so far as degrees so dimly visible, so imperfectly marked, can be affirmed to differ. Large populations might be comparable to large armaments; which it is the interest of all, but not of each, to discontinue. Thus the proximate end, the πρακτὸν ἀγαθὸν in respect of populousness, may be even further from J. S. Mill's extreme Malthusianism than the position to which the first principle of pure utilitarianism has conducted Dr. Sidgwick.

It will be understood that we are here considering only those parts of Dr. Sidgwick's new work which touch upon political economy. Of the immense additions which he has made to political philosophy a great part lies beyond our province.

Capital, Labour, and Trade, and the Outlook. Plain Papers by MARGARET BENSON. (Society for Promoting Christian Knowledge), 1892.

THE epithet "plain" has seldom been better deserved. Miss Benson rivals Miss Martineau in the art of simple illustrations. Take, for instance, the following lesson on efficiency of money :—

"Two men went to the Derby with a barrel of beer to sell. One man had a threepenny-bit in his pocket. They were partners in the barrel, and as they went they added up the profit they would make at threepence a glass. But the day was hot, and the first man wanted a glass. So he paid the second man the threepence, and drew himself a glass. Then the second man began to be thirsty too, so he drew a glass, and paid back the threepence to the first man; and as the day grew hotter and the road dustier, the first man paid back the threepence, and the second man paid it back again; and it is needless to say that finally the barrel did not get to the races. Well, the point of the story is this—Was the value of that barrel only *threepence*, because there was only *one threepenny-bit*—paid for it over and over again?"

An equally lively lesson on the truths and fallacies connected with the notion of "giving employment" is thus wound up :—

"Suppose yourself to have waked up one morning and found . . . that a law had been put into operation that no one was any longer to have any luxuries. How you would rub your eyes when you looked round the room and found that all your pictures had gone! The photograph of your son at sea, where is it? you ask. 'Oh, the inspector took that yesterday,' says your wife; 'he said it was only a luxury.' 'But where are the chairs and tables?' you say, surprised. 'Oh, those are going to be used for firewood.'"

And so on.

"The end of it would seem to me an immense population working all their days living on the bare necessaries of life, no little comforts, no amusements, no learning except what will help you to produce faster, no religion."

In fact, like a community of ants.

"Solomon said, 'Go to the ant,' but he never said you were to *stop* there; 'Consider her *ways* and be wise,' but he never told you to consider her ends."

Miss Benson, while as simple as Miss Martineau, is more accurate. She teaches the modern doctrine of "final" utility and sacrifice; mostly by way of short statement rather than parable, which is perhaps less suited to those very abstract principles. For instance, the gist of one lesson is—

"Labour and Capital are paid out of their joint produce according to their comparative efficiency, and this rate of payment measures the Cost of Abstinence of the final supply of Capital, and is determined by the labourers' Standard of Comfort."

In her admiration for the principle of competition Miss Benson seems to recall an earlier age.

"We cannot get a distinct notion of what is 'fair' payment, what the 'real work' or value of work is, or what return for it is 'just,' except by determination of market value."

It is ingeniously argued that an intuition as to the just rate of wages, the labourer's share of the total produce, involves an intuition as to what is the just rate of interest. "Would my instinct on this point coincide with that of all fair-minded people? I confess I should not like to trust my moral sense in this matter." This severe doctrine is qualified by the distinction between "competition" and the "hindrance to competition." The outcome of a full and, as it seems to us, fair discussion of the issues between Socialism and *laissez-faire* is: "What we must do

is not to do away with competition, but to make it really free and fair by equalising opportunities as much as possible." It might have been well to state more explicitly the relation between this unfettered competition and "organisation," or trade-unionism, which in the case of female labour, at least, the writer recommends as a panacea. This difficulty might have been cleared up, and the usefulness of an excellent primer would have been enhanced if references to original authorities had been given less sparingly. The writer of a text-book should both point to higher worlds of knowledge, and lead the way. Miss Benson does the latter only.

The Positive Theory of Capital. By EUGEN V. BÖHM-BAWERK. Translated, with a Preface and Analysis, by WILLIAM SMART, M.A. (Macmillan & Co.), 1892.

THE excellence of this translation lends weight to a suggestion made by the translator in the preface to a work, of which the present one is the sequel, namely, "that a valuable service might be rendered to the science, and a valuable training in economics given, if clubs were organised, under qualified professors, to translate, adapt, and publish works which are now indispensable to the economic student." Mr. Smart would be eminently qualified to superintend the work of translation, to judge from his able performance of it. He has elucidated his author, not only by a faithful and happy rendering of the text, but also by a critical and exegetical apparatus, consisting of, first a substantial preface, then a masterly analysis in the form of a table of contents, lastly, by headings affixed to each page, so as to form a running commentary or summary. Thus the reader is not only enabled to contemplate the Austrian masterpiece through the transparent medium of clear English, but also he is, as it were, conducted to new standpoints from which either a better general view of the whole work may be obtained, or the parts may be observed more closely. These opportunities of re-examination will not be without effect on the judgment of the English reader who is already conversant with the original. Features which he admired before he will probably now admire the more. On the other hand, he will have more confidence in offering criticism now than when there might remain some doubt whether he had fully apprehended the author's meaning. We have been thus differently affected in considering two distinct parts of the work before us: on the one hand, the analysis of

the motives to which the practice of paying interest may be ultimately traced back; and on the other hand, the consideration of that higgling of the market by which the rate of interest is evaluated.

Dr. Böhm-Bawerk's treatment of the first subject (in the fifth book of the English edition) is, possibly, destined to be classical, like Adam Smith's treatment of the Division of Labour, or Jevons's of Final Utility. Dr. Böhm-Bawerk happily distinguishes the instinctive unreasoning preference of present above future goods from "considerations which affect the expediency, in the eye of reason, of consulting future interests, at the expense of the present," to use Mill's words (*Political Economy*, Book I, ch. xi. p. 2). Of the latter kind is the motive which prompts to store up ice in winter against the coming summer—a sort of consideration which may, of course, cut both ways, since in summer the value of ice six months later is small, not only on account of the futurity, but also the cold of winter. There is, thirdly, the advantage of possessing means of production in the present so as to make use of them in the "roundabout" methods of production which are generally more effective the longer the period over which they are extended.

We content ourselves with merely indicating the heads of a beautiful analysis, which is probably already familiar to our readers, if not from a study of the original, at any rate through the admirable paraphrase given by Mr. James Bonar in the *Quarterly Journal of Economics* (1888–9), and through the abridgments which have already found their way into text-books, such as Dr. Andrew's excellent *Institutes*.

Dr. Böhm-Bawerk not only analyses the motives to which we have summarily referred; but he also shows them at work by presenting a vivid picture of that process of production by which the future is continually becoming present. He sheds new light on that subordination of means to ends which Mill has described in the following passage and its context:—"The miller, the reaper, the ploughman, the plough maker, the waggoner, and waggon maker, even the sailor and shipbuilder, when employed, derive their remuneration from the ultimate product —the bread made from the corn on which they have severally operated, or supplied the instruments for operating" (*Political Economy*, Book I. ch. ii. pp. 1 and 2). The Austrian term for products which are at the extremity of this train, which are ends, not means, namely, "goods of the first order," is doubtless an improvement on Mill's "ultimate product," or "article fitted

for human use" (*ibid.*). Dr. Böhm-Bawerk assists us to realise the important conception that the national produce is "a Flow, not a Fund"—to use the words of Professor Newcomb, quoted with approbation by Professor Marshall. Representing successive years by a series of concentric circles, Dr. Böhm-Bawerk allows us to imagine the stream of products flowing across these lines towards the outermost circle which corresponds to goods of the first order; the stream continually broadening as it flows outwards. Very just and beautiful is the conception of the "Subsistence Fund," gradually ripening through successive processes of production to the final stage of consumption.

Dr. Böhm-Bawerk not only shows why future goods are in general less highly prized than present ones, but also how the lower price of the former in exchange for the latter is determined. The determination of the price of future goods, or, in other words, of the rate of interest, comes under the general theory of value. In Dr. Böhm-Bawerk's statement of this theory the conception of "marginal utility," which Jevons made familiar to the English public, has a prominent place. But the Austrian exposition of the subject is not embarrassed by the symbols and ideas of the differential calculus. There is much to be said for thus presenting a conception which is essentially mathematical in a form free from scientific conventionalities. It may be expected that the general reader will derive the sort of advantage from this simplification which we have already admitted that the English student derives from the translation of a profound German work. But it is not every translator who, like Mr. Smart, is penetrated with the genius of the original language. There is one mathematical idiom—to pursue the metaphor—which seems to be very imperfectly rendered in Dr. Böhm-Bawerk's version of the theory of value. The term "marginal" as frequently used by him fails to express adequately the distinction between infinitesimal or differential quantities and those which are finite and integral. In fact, the author may seem not to have realised the part which the differential calculus plays in the solution of that class of problems to which, as Malthus has profoundly observed, many of the "questions in morals and politics" may be reduced, "the problems *de maximis et minimis*." The nature of the charge which we prefer will appear from a consideration of the following passage in which the distribution of a given quantity of means among different applications is discussed.

"Suppose that in one branch of employment there are four opportunities [four different ways of employing the goods],

indicated according to importance by the figures 10, 8, 6, 4, and that in another branch there are four opportunities indicated by the figures 9, 7, 5, 3; and suppose that a man possesses in all five individual goods; there is no doubt that the five goods will be allotted to the opportunities 10, 9, 8, 7, 6, and that the last figure (which accidentally belongs to the first branch of employment) is the real marginal utility and determines the value of the goods, while the employment that comes next in the second branch, that indicated by the figure 5, must according to our formula become the "pseudo-marginal utility" (*Positive Theory of Capital*, Book III. ch. vii. p. 165). This distinction between the real marginal and pseudo-marginal utility appears to us unhappy, and calculated to obscure the broad general statement that of all alternative branches of employment or sources of advantage, one does not play a greater part than the other in determining economic equilibrium. To use a metaphor of Professor Marshall's—when two balls are placed in a basin, one does not determine the position of the other more than the other that of the one. The general idea is that the advantage of the economic agent depends upon, or is a *function* of, the quantities of means assigned to different kinds of wants, or "different branches of employment" in the phraseology of the passage from which we have quoted, "*e.g.*, timber wanted for building and burning" (p. 164). If a man possesses a limited stock of timber, he will in general distribute it between the two uses, so that the advantage which is a function of the quantities used in each branch of employment should be a maximum. The marginal utility of the first branch is not in general more real, or more false, than the marginal utility of the second branch.[1] They are interdependent and mutual. Suppose however that the function varied only *per saltum* in the case of one employment as compared with the other. Say, in the case of building, less than an unit load of timber is not a sensible advantage; while tenths of an unit may be taken into account in providing for the other use. One might say in that case that the *decimals* of the timber employed were determined exclusively by one use; the *integers* would still as before be an affair of both uses. This, as we understand, is the portion of truth contained in the contributions which our author has made to the theory of final utility.

[1] Let it be required to find A and B such that ϕ (A) + ψ (B) should be a maximum; given A + B = constant. The solution is afforded by the simultaneous system of equations: (1) A + B = given. (2) ϕ' (A) = ψ' (B). It is trivial to insist that ϕ' more than ψ' "determines" the solution.

To take a physical metaphor—one suggested by Dr. Böhm-Bawerk himself [1]—let us represent the two branches of employment by two upright tubes opening at their lower ends into a chamber full of steam. In each chamber slides a plug or piston driven upwards by the pressure of the expanding steam at its lower end, and downwards by a spring [2] pressing on its other extremity. In general the equilibrium of the system is determined as much by one tube as another. But let us suppose one piston to move only *per saltum*; let it be arranged (by some apparatus of valves or notches) that, as the steam in the chamber is continually heated, piston A only moves when the pressure has been increased by a whole unit. Then with respect to the *integers*, it is still true that the position of equilibrium is determined as much by one tube as the other. But for fractional values of pressure we may say that the equilibrium of the system is determined only by the tube B. That is the fraction of truth which is added by the Austrian school to the theory of marginal utility. Of this character are all the "casuistical complications" (the author's own phrase) with which the simple theory has been perplexed; to this comes all the business of "alternative uses" and "substitutionary utility," and value travelling from one complementary good to another.[3]

Take, for instance, the case put at p. 156:—"My only overcoat has been stolen . . . I shall . . . try to shift the incidence of the loss on to other kinds of goods" . . . either, if I am well off, "buy one luxury the less," or if I am not well off, "economise in my housekeeping expenses" . . . or, "if I am so far reduced that I can provide only for the most urgent concrete wants in the other classes," then "I needs must get along without an overcoat." Now the general idea appropriate to the case imagined, is that my satisfaction depends on all three species of commodities; my advantage is a *function* of, say, coats, meat, pudding, etc. At given prices of coats, meat, pudding, etc., I shall buy—having regard to the funds at my

[1] *Positive Theory*, pp. 230, 231. "Production may be compared to a giant pump. Every branch of want has its separate pipe sunk down to the great reservoir of original productive powers, and competes with all the other branches of want in trying to draw its supply by suction from that reservoir."

[2] Or, keeping closer to Dr. Böhm-Bawerk's illustration with which we are making free, we might suppose the resisting force in each tube to be air, more or less exhausted by an air-pump.

[3] The conduction of value describes, as it were, a broken line. First it goes from the marginal products to the means of production and fixes their value; then it goes in the opposite direction from the means of production to the other products which may be made of them. (*Positive Theory*, iii., p. 188.)

disposal—such quantities as will render the above indicated function a *maximum.* In case of a deficit occurring, the general theory, applicable to rich and poor, is that there will be a rise of the margin to a higher final utility *all round*—a contraction of every branch of expenditure more or less. To one taking a general view, the marginal utility of a coat is not more determined by that of the meat or pudding than *vice versâ.* It is therefore very perplexing to read that in general—" in all the other cases " but the one in which I am much reduced—the value of the coat " is determined by the marginal utility of foreign classes of goods and wants " (p. 157).

No doubt, if you make the supposition that I had only the one (top-coat), and further regard the expenditure on a coat as considerable, integral rather than differential, then the sort of fractional truth which we have above indicated may be attributed to the formula that the value of the coat is determined by that of the meat or pudding. But it should be observed that the Austrian formula, far from prevailing in all cases except extreme poverty, becomes more inapplicable, the richer we suppose our man, the smaller in respect to his income the expenditure on a coat.

The preceding remarks have been directed specially against the theory of value set forth in the third book of the work before us. But they are equally applicable to the similar doctrines in the fourth book relating to price. Some other incidents in that book may be more mildly censured, not as misleading complications, but as simplifications of which the gain in respect of ease is not compensated by the loss in respect of generality. We allude to the conception of the *Grenzpaar*, the " limiting couple " of dealers in a market. The author illustrates the play of demand and supply by supposing a market in which, on the one hand, there are a number of dealers, each with a horse to sell, and, on the other hand, a number of would-be buyers (*Positive Theory*, p. 203). The latter are arranged in the order of their strength : first is the one who is prepared to give most for a horse, the highest price which the second can afford is less, and so on. Parallel to this arrangement is that of the would-be sellers : first, he who can sell cheapest ; and so on. Upon this hypothesis it might happen that the fifth would-be buyer is willing to give a little more than the lowest figure which the fifth would-be seller will take ; while the sixth on the side of the buyers is not willing to give quite as much as the sixth horse-dealer stands out for. In this case five horses only will be sold,

and the couple who are the last between whom a bargain is possible—buyer No. 5 and seller No. 5—enjoy a mighty distinction as the *Grenzpaar ;* an honour which appears to be to some extent shared with Nos. 6, the first couple between whom a bargain is impossible.

Now this attention to a particular couple is not always appropriate. How if the weakest actual buyer should prove to be, not buyer No. 5, but buyer No. 1, as to a *second* horse? Professor Böhm-Bawerk, indeed, has thought of this case, and called attention to it in a note (p. 214). So far—although the whole simplicity of the scheme is destroyed when we permit second and third horses to the different buyers and sellers—the conception of a " limiting couple " may still be retained. It will be found, however, that this idea is not appropriate to the general case of a divisible commodity, which a single individual on one side of the market may buy from or sell to a large number on the other side. That general case is much more clearly represented by a diagram like that employed by Messrs. Auspitz and Lieben (*Theorie des Preises*), where the inner curves represent the dispositions of the individual dealer, the outward thick curves the collective supply and demand. No doubt Dr. Böhm-Bawerk's conception is appropriate to a particular case, that in which the *Kleinste Marktübliche Mengeneinheit*, in the phrase of Messrs. Auspitz and Lieben (*ibid.* p. 123), is considerable. But it is better with those theorists and with Prof. Marshall (*Principles of Economics*, Book III. ch. iii. §§ 4 and 5, 2nd ed.) to begin with the general or, at least, the simple case.

Altogether, the leading characteristic of the Austrian theory, the elaboration of formulæ appropriate to the case in which the *minimum vendibile* is finite and large, may appear one of those things which ought to have been done, provided that other more important things were not left undone. But attention to the rue and cummin of the theory of value may result in neglect of the weightier matters of the law—the great Ricardian law of cost. Dr. Böhm-Bawerk regards this law as " secondary " (Book III. ch. x.); " the whole truth about the celebrated law of costs " may, according to him, be derived from the received theory of marginal utility combined with his own doctrine of " complementary goods." That " costs exert a causal influence on the price of products " (Book IV. ch. vii.) he does not admit; that the desire to minimise effort and sacrifice—as well as to maximise gratification—is an economic force is a truth not conspicuous in his pages. We read little about the mobility of

labour seeking the position of minimum cost in the sense of effort and sacrifice; little about the equation of net advantages in different occupations. How completely the law of cost, as it has been understood by the English school, has been evacuated of its significance may appear from the reflection that, as far as we have observed, all that our author says about the correspondence between value and cost of production would be equally true whether the labour world was, or was not, divided by impermeable barriers into "non-competing groups." But there is all the difference between these two cases, as Cairnes, among others, has pointed out.

We may connect the disposition to degrade the element of cost with that imperfect view of a maximum problem to which we have already adverted. Because economic equilibrium is determined by utility, it is assumed that it cannot also be determined by *disutility*, cost and sacrifice. To recur to the physical metaphor which we indicated above, comparing the different branches of production to tubes of different sizes, in which pistons are driven by expanding steam against resisting springs, not only does our author suppose that equilibrium is determined by one piston rather than another,[1] but also it has not occurred to him that there is another condition of equilibrium represented by the varying pressure of the steam in our metaphor. The quantity of the vapour and other things being supposed constant, the pressure against the pistons will become less as the steam expands. At the position of equilibrium the diminished pressure of the steam will just balance the increased resistance of the springs. The question whether utility or cost determines normal value may appear as trivial as the question whether in our illustration the equilibrium of the system is determined by the pressure of the steam rather than by that of the springs.

These remarks relate particularly to that mode of sacrifice which labour constitutes. It is a nice question of interpretation whether the same criticism is applicable to the sacrifice of abstinence or waiting as conceived by our author. The excellent observations upon the sacrifice involved in the formation of capital (Book II. chs. v., vi.) may be cited against that interpretation. Elsewhere, as it seems to us, with respect to abstinence as well as labour, the Austrian, as distinguished from what may be called the English theory, is limited to "market values" or "short periods" in Professor Marshall's phrase. It is only upon some such view that we can explain the reiterated state-

[1] See above, p. 26.

ment, that "in the subjective circumstances of the capitalist a sum of present goods is as a rule worth as much as the same sum of future goods" (see *Positive Theory*, pp. 315, 330, 382). Upon any other interpretation what is the quarrel between our author and Senior, prolonged through many pages of the earlier work to which the volume before us is a sequel? We venture at any rate to regard Senior's statement of the relation between abstinence and value as clearer, if not more correct. Indeed, as much may be said of an earlier writer, S. Bailey, whose *Critical Dissertation on Value* contains the following remarkable passage (p. 218, ed. 1825) :—

"The time necessary to produce a commodity may, equally with the requisite quantity of labour, be a consideration which influences the mind in the interchange of useful or agreeable articles. We generally prefer a present pleasure or enjoyment to a distant one, not superior to it in other respects. We are willing, even at some sacrifice of property, to possess ourselves of what would otherwise require time to procure it, without waiting during the operation, or of what would require labour without personally bestowing the labour. If any article were offered to us, not otherwise attainable except after the expiration of a year, we should be willing to give something to enter upon present enjoyment. On the part of the capitalist who produces and prepares these articles, the time required for the purpose is evidently a consideration which acts upon his mind. If the article is wine, he knows that the quality is improved by keeping; he is aware that the same excellence cannot be imparted to any wine, without the employment of capital for an equal period; and that people will be found to give him the usual compensation rather than employ their own capital in producing a similar article."

Upon the whole, the most important question raised by the new theory appears to be, whether it is worth while taking account of effort and sacrifice as a regulator of value in a regime of competition, as stated by Ricardo and—with less liability to misinterpretation—by Professor Marshall. Without presuming to prejudge this question, we have but endeavoured to clear it from side issues. We may have contributed also something to the controversy by selecting as a worthy antagonist of the Ricardian principle, not those whose hostility may be ascribed to distaste and inaptitude for all abstract reasoning, but one whose speculative genius has placed him among the foremost exponents of the deductive method in his country.

An Introduction to the Theory of Value, on the lines of Menger Wieser, and Böhm-Bawerk. By WILLIAM SMART. (London: Macmillan & Co.), 1892.

THE volume before us will prove even more useful than that which we have already reviewed, to the English reader who wishes with the least possible effort to apprehend and appreciate the new doctrines which have attracted so much attention. Mr. Smart expresses with admirable fidelity and brevity the leading conceptions of the Austrian school: the fine distinction between subjective and objective value, the "limiting couple" of buyer and seller, with whom rests the determination of price in the market, the theory of "complementary goods," the utility which, travelling from the product up to agents of production and down again to other products, is said to occasion the illusion that value is determined by cost of production and other equally difficult and important doctrines. We see no reason to modify the judgment which we have just now expressed with regard to these principles in their original form. For example, we are confirmed in our surmise that the formula, "the value of a good is almost never measured by the utility it actually affords . . . but by a foreign utility" (p. 37), is but an imperfect mode of expressing the well-known conditions of economic equilibrium in the particular case where the quantities of the goods under consideration vary *per saltum*. Thus, Mr. Smart says (*loc. cit.*) :— "Suppose that a thrifty housewife has laid in her winter stock of butter, and that by some accident it gets spoiled. Will she be likely to do without butter for the rest of the winter? She will, of course, replace the butter, and do without some comfort or luxury which she would otherwise have allowed herself. That is to say, she will shift the loss to the least sensitive part of her expenditure. . . . Similarly, if I am calculating the loss of value which I suffer from a horse going hopelessly lame, I do not estimate it by the satisfactions of riding and driving I should lose. I replace the horse by economising in other things—perhaps by doing without my summer holiday—and the value of the horse is measured by the foreign utility of the summer holiday." For reasons stated in the preceding review, it appears to us that, in the readjustment following on the loss supposed, the value of the article on which the loss primarily fell, say butter, is not determined by the value of another article, say bacon, any more than the value of bacon is determined by butter. The quantities both of butter and bacon will be in general more

or less reduced in such wise that the final utility procured by the last penny expended should be the same for both articles. In the case of a stud, indeed, considered as an object of consumption which varies by very large differences, a certain slight significance may be attached to the statement that the value of the (last) horse kept is measured by a " foreign utility." The fractions of the price—the shillings not the pounds; or the units, but not the tens of pounds—are so determined.

Mr. Smart seizes the essence of the new doctrines when he says in conclusion: " What is contended is that the law of cost is a good working secondary law " (p. 82); not " fundamental " (p. 81), like the principle of utility. He quotes Jevons: "Repeated reflection and inquiry have led me to the somewhat novel opinion that *value depends entirely on utility*." It is true that Jevons does say so. But the economists who appeal to his authority in favour of a one-sided theory of value remind us of the logicians who, following Aristotle, attended only to his doctrine of the syllogism, forgetful that the great master had also taught the complementary principle of induction. It is to be remembered that Jevons, in his chapter on labour, in effect makes value depend not " entirely on utility," but also on the *disutility* of labour. After giving (p. 200, 2nd ed.) equations for the distribution of a given fund of labour among different employments—the problem beyond which, as we understand, the Austrians have not thought it necessary to advance—Jevons proceeds :—" We require another equation in addition to the above. . . . Labour will be carried on until the increment of utility from any of the employments just balances the increment of pain." In other words, and as the symbols of the context suggest, utility and disutility are independent variables in that expression, the maximum of which determines economic equilibrium. Among the important lessons which the world owes to the Austrian school, this is not one.

Das Geschlechtverhältniss der Geburten in Preussen. Von Dr. C. Düsing. (Jena: Gustav Fischer), 1892.

The familiar observation that the areas of art and science do not coincide is nowhere more strikingly exemplified than in the field of inquiry which Dr. Düsing has chosen. The proportion between the sexes at birth is not related, like the death-rate at different ages, to the business of insurance or the art of sanitation. The fact that some five per cent. more boys are born

than girls is probably a mere *curiosum* in the eyes of the practitioner; yet it has a theoretical value for the biologist, especially when compared with similar observations for the inferior animals, and even plants, as has been done by Dr. Düsing in an earlier work. Moreover, even if the fact were entirely isolated and remote from physiological inquiries, its investigation would still possess a scientific interest, as affording a particularly perfect study in statistical method. For the proportion between the numbers of male and female births is one of the concrete phenomena most amenable to the delicate rules for appreciating evidence which are furnished by the Theory of Probabilities. Not only is the average rate particularly constant under unaltered circumstances, but also the deviations from the average, the so-called "errors," display a typical regularity not often found elsewhere outside the sphere in which the Calculus of Probabilities took its rise, viz. games of chance. This character of the sex-ratio was first pointed out by Professor Lexis, whom Dr. Düsing has wisely chosen as his guide. Instructed by the author of *Massenerscheinungen*, Dr. Düsing constructs a formula whereby to test the worth of an average in view of the number of observations which it represents. This touchstone being applied reduces many specious and hitherto esteemed generalisations to worthless conjectures. On the other hand, those observations which are tried by this test and not found wanting acquire in the eyes of the connoisseur a value—as it were of refined gold—concentrated into small bulk. Take, for example, the observation that the sex-ratio (as we may call, for brevity, the percentage of male compared with female births) for more than a million plural births (twins and triplets) in Prussia was 104·447 (males : 100 females); whereas the corresponding ratio for all births (single as well as plural) was 106·305, the observations on which this average is based numbering several millions. The difference between the two averages, viz. 1·858, being more than twelve times as great as the *probable error*, 0·14, cannot possibly be accidental. We obtain at a stroke a degree of evidence in favour of law which could only be obtained, according to the common method, by separately considering several batches of statistics for plural births and births in general, and observing whether the respective sex-ratios repeatedly differed from each other in the same sense.[1]

[1] We venture to suggest that the author's argument would have been improved in form, if he had contrasted the sex-ratio for plural births during one period, say, 1824–1887, with the sex-ratio for births in general during the *same* period. As it

The observation that the sex-ratio is less in the case of plural births is one instance of the author's theory that this ratio tends to decrease as the birth-rate increases, and *vice versâ*. The theory is more directly supported by the variations of the two phenomena from month to month. The seasons of maximum birth-rate correspond with the seasons of minimum sex-ratio, and conversely. The variations from year to year during the period 1816–1887 bear similar witness. Each year of maximum birth-rate coincides with, or at least is adjacent to, a year of minimum sex-ratio, and conversely. Adding the births for the ten years in which the birth-rate is particularly high, Dr. Düsing finds the sums 3,650,678 boys and 3,451,820 girls; with the sex-ratio (or proportion of male to female births) 105·761 (: 100). Likewise adding the births for the twenty-four years in which the birth-rate is particularly low, he finds 9,021,366 boys and 8,495,880 girls; with the sex-ratio 106·1852. The difference between the two percentages, viz. 0·424, being some seven times greater than the probable error to which it is liable, is certainly significant. The present writer has obtained a similar result by considering the shorter and more homogeneous period, 1816–1870, omitting the years 1870–1887 which form part of Dr. Düsing's data. The same conclusion is suggested by observing the variations of the sex-ratio from place to place. Some caution, however—not to say ingenuity—is required in interpreting this evidence. If we put in one category the places which on an average of several years have a very high birth-rate, over 42·5 per 1,000, in another category the places which have a birth-rate between 42·5 and 40, and so on in descending degrees of birth-rate, the categories so formed will not present, as they should according to the theory, an increasing scale of sex-ratios. But Dr. Düsing appears justified in accounting for this anomaly by the fact that in a long tract of years there are in each district ups and downs of prosperity, with attendant variations in the birth-rate so violent as to mask the correspondence between high birth-rate and low proportion of males. It appears legitimate therefore with him to put in one category, not simply the place which on an average of years has a high sex-ratio, but the

is, he has taken for the second term of comparison a different period, namely, 1874–1887; thus leaving himself open to the suspicion that the difference on which his argument rests is due to a secular increase of the sex-ratio, which is higher for Prussia during the period 1874–1887 than during the preceding half-century. In fact, the difference between the sex-ratios for plural births and births in general is not so large as he represents it, but quite large enough for the argument. (See *Geschlectverhältniss*, p. 19, referring to p. 1.)

place *with the time; e.g.*, in the category of birth-rate above 45 per 1,000, Dantzig, 1875–77; Marienwerder, 1873–80, etc.; in the category of birth-rate under 45 and over 40, Dantzig, 1873–74..., Marienwerder, 1881–83...; and so on. Thus rearranged the descending scale of birth-rates corresponds exactly with an ascending scale of sex-ratios.

The proposition which connects a small excess of male births with a large birth-rate, connects it also with prosperity and abundance. But an independent principle, as we understand, is involved in the theory that the depletion of the adult male population caused by war is compensated by an increase in the excess of male births. Another independent principle connects a large proportion of females with "crossing" of breeds. Dr. Düsing thus explains the well-known fact that the excess of male births is particularly small in towns. The less familiar variations in the sex-ratio according to the religion of the parents are similarly explained. With the Jews, owing to the purity of their breed, the excess of males is particularly great. Conversely mixed marriages between Christians of different persuasions—corresponding it is presumed to mixture of breed—are favourable to female births. In the case of the mixed marriages between Jews with Christians the large proportion of girls is quite overwhelming. But Dr. Düsing with characteristic judgment and candour does not clutch at this piece of evidence; which, tested by the theory of errors, is found not to be very valuable.

The hypothesis that "crossing" favours female births is used by Dr. Düsing to account for another frequently observed circumstance: namely, that the excess of males is remarkably small in the case of illegitimate births. In a chapter devoted to the latter subject, Dr. Düsing brings out the curious relation that, according as the proportion of illegitimate (to legitimate) births increases, the peculiar characteristics of illegitimate births diminish. May it be, he suggests, that, where illegitimacy is more of an institution, the condition of illicit unions approaches nearer to that of regular marriages? We might thus account for the decrease, with the increase of illegitimacy, of at least one incident of that condition, namely, the high proportion of the still-born which prevails among illegitimate births.

As it has long been known, the number of males who do not cross the threshold of life is much greater than that of females, in the ratio of about 130 : 100. Dr. Düsing has moreover proved, by a rigorous use of the calculus, that this ratio diminishes as the proportion of still-births to births in general increases. He

accounts for this observation by an ingenious and probable theory.

The distinction between fact and theory is present to us while expressing our admiration for Dr. Düsing's researches. It is one thing to determine the mathematical probability that two averages differ significantly from each other; another thing to appreciate what Cournot calls the "philosophical probability" that a particular cause has operated. As that high authority on the doctrine of chance remarks, no attention would be due to a theory that the sex-ratio varied according as the day of birth was odd or even. Some such reflection may perhaps be suggested by our author's hypothesis that the ravages of war upon male life are repaired by the compensating action of generative nature. It must be remembered however that "philosophical" probability, though in a sense *a priori*, yet ultimately rests upon experience. Now Dr. Düsing, in virtue of his earlier studies on the sex-ratio both for man and the inferior creation, may fairly lay claim to just that wide conversance with the phenomena which constitutes a good authority on the question what hypotheses are worth submitting to statistical verification. We do not presume therefore to criticise his physiological speculations. We content ourselves with expressing the wish that the present work might be translated into English as affording a particularly perfect example of the technique of statistics.

Mathematical Investigations in the Theory of Value and Prices. By Dr. Irving Fisher. From *Transactions of the Connecticut Academy* (Vol. IX., July 1892.)

Dr. Fisher is distinguished above most writers on Economics in that he does not attempt to carry the reader over the whole ground, however familiar, but confines himself to those parts where he is himself a path-breaker. Or, if it is necessary to start by beaten ways, yet even these he makes straighter, and improves them by depositing new materials.

The last remark applies especially to the first part of the *Investigations*, in which the author restates many of the conclusions of his predecessors. He imparts new clearness to the idea of marginal utility by introducing a "unit of utility." "The utility of the hundredth loaf per year may be regarded as the unit of utility," it being assumed that the utility of bread (or any other commodity which may be selected as the standard) depends on the quantity of that commodity, "but is *independent*

of the quantities of other commodities and services." This condition, it may be observed, underlies the construction of a Demand-curve as usually conceived, *e.g.*. by Cournot (*Théorie Mathématique*, chap. xi.) and by Messrs. Auspitz and Lieben. A unit thus rigorously defined might be named a "util." But "perhaps utility is an unfortunate word to express the magnitude intended. Desirability would be less misleading, and its opposite undesirability is certainly preferable to dis-utility."

The theory of exchange which is based upon marginal utility has received from Dr. Fisher some very happy illustrations. Observing that most economists employ largely the vocabulary of mechanics—equilibrium, stability, elasticity, level, friction and so forth—and profoundly impressed with the analogy between mechanical and economic equilibrium, Dr. Fisher has employed the principle that water seeks its level to illustrate some of the leading propositions of pure economics.

"A consumer will so arrange his consumption that the marginal utility per dollar's worth of each commodity shall be the same. . . . The marginal utilities of all articles consumed by a given individual are proportional to the marginal utilities of the same series of articles for each other consumer. . . . Price, production, and consumption, are determined by *the equality of marginal utility and marginal cost of production.*"

We cannot attempt to describe the elaborate construction of tubes and vessels by which these truths are bodied forth. Indeed we must warn the reader that, even with the help of the author's diagrams, a considerable strain of attention will be required in order to follow explanations like the following, which we take at random out of several pages of like matter:

"There remains to be described the system of levers. The purpose of these levers is to keep the continuous ratio of marginal utilities the same for all individuals and equal to the ratio of prices. First, there is a system of oblique levers (F 12, etc., Fig. 9) connected by sliding pivots with the tops of the cisterns and having their lower extremities hinged to wooden floats F, the hinges being on the level of the water of the tank. These floats are free only to shift laterally. . . ."

Whether it is worth while taking much trouble in getting into these conceptions depends upon what may be called their final utility—how much cognate training the reader has already received. For those who are not already familiar with mathematical functions and fluxions Dr. Fisher's illustrations of the interdependence of the different parts of the economic system

must be invaluable. Even mathematicians, while confining themselves to symbols, might miss some of the theories to which Dr. Fisher is conducted. For instance, suppose the income of one individual to increase, *ceteris paribus* ; prices in general will rise, but not necessarily of all articles; and thus some exceptional individuals may be benefited, not injured, by the increase of the income of their neighbour. There are mathematicians who have not yet perfectly realised what Dr. Fisher, after recent writers, calls the "fundamental symmetry" between the forces of demand and supply. It is not long since an accredited teacher of the mathematical branch of economics confidently stated :

"Value is determined by something independent of cost of production, and itself determines the maximum cost at which any one will be willing to produce." [1]

As long as we restrict ourselves to the first approximation proper to Dr. Fisher's Part I.—"the utility of each commodity assumed to be dependent only on the quantities"—it is possible to represent the relation between price and quantity of commodity by the mechanism which Dr. Fisher uses; the price corresponding to the depth (measured downward from a fixed point) of the level of a liquid in a certain vessel or cistern, the configuration of which corresponds to what is known as an individual's Demand-curve. But when we suppose "the utility of one commodity a function of the quantities of other commodities," mechanical illustration is no longer adequate to the complexities which arise. In the case of two "competing"—or as they are sometimes called, rival—commodities (such as tea and coffee) or two "completing" commodities—or commodities which are the subject of a *joint demand*—(such as tea and sugar) we should have to suppose that, as one vessel is filled with liquid, the shape of the other shrinks or bulges. In the most general case "the shape of each cistern is a function of the whole state of equilibrium and differs so soon as that differs." The whole rigid system bursts up in a universal *débâcle* ; as we relax the assumption that the utility of one commodity is independent of that of others. To represent the more complicated cases, we must resort to the more plastic medium of symbol; and, beginning with the case of two commodities interdependent in their use, put "$U = \phi$ (A, B), where U is the total utility to [an individual], of the consumption combination A and B."

"Consider horizontal sections of this surface, that is, sections parallel to the plane of the A and B axes. Each section forms a

[1] *Statist*, December 17, 1892.

curve which may be called an *indifference curve.* It is the locus of points representing all consumption combinations of A and B which have a given total utility." Suppose an individual, possessed of the quantities A and B to receive an increment to his income; in what *directions* will he increase his expenditure on the two commodities? Not of course along the indifference-curve which passes through the point A, B; for thus he would not increase his total utility; but in the direction of "maximum increase of utility," which proves to be perpendicular to the indifference-curve. These conceptions, received by Dr. Fisher from his predecessors, have been greatly improved by him; they have been applied to a variety of concrete cases; *e.g.*, with reference to competing commodities, such as the "grades" of the same article virtually form. "If the rich consumers predominate," a certain line becomes steeper, and—

"The two prices of the two qualities separate widely. This interprets the fact that in a rich market like New York City a slight difference in quality will make an enormous divergence in price, while in some country towns different grades either do not exist, or sell for nearly the same price. In the country districts of 'the West' all cuts of beef sell for the same price (about 10*d.* per lb.). In the cities of the West two or three qualities are commonly distinguished, while in New York a grocer will enumerate over a dozen prices in the same beef, varying from 10 to 25 cents per lb."

When we suppose the total utility to be a function of three commodities we have no longer a dimension to spare for the representation of that utility. But we may imagine the "indifference surfaces" like so many shells (*e.g.*, shaped like egg-shells) over which utility is distributed as a *density*, like electricity over a conductor.

"The utility distributions may be very complicated. If the three articles are substitutes, like oats, corn, and rye, the indifference-surfaces may be almost plane. . . . If they are completing articles, as cuffs, collars, and ties, the indifference surfaces are arranged like concentric cocoons directed towards the origin."

The "maximum directions," the normal to the indifference-surface, are the same (parallel) for all individuals in a market.

The dimensions of space fail us when we advance to the general case of any number of interdependent commodities. Soaring into the fourth and higher dimensions, beyond the furthest flights of his predecessors, Dr. Fisher employs the "quaternion analysis of Hamilton, the *Ausdehnungslehre* of Grassman," to

indicate the analogues of the theorems which he has proved for simpler cases in more familiar symbols. He attains in this higher region a conclusion which seems to us of unexpected importance. Unless certain mathematical conditions are fulfilled by the "maximum directions" and the prices which act along them, "integration is impossible and there *is no such quantity as total utility or gain*" *!*

The importance of this theorem appears in the conclusion that "if we seek only the causation of the *objective facts of prices and commodity distribution*" certain "attributes of utility as a quality" are unessential. We need not assume that "for the same individual the marginal utilities at one consumption-combination can be compared with those at another, or at one time with another." While in the elementary stage, fixing attention on a single commodity, we require to assume some standard unit, in the higher stage, dealing at once with several commodities, "we may dispense with the total utility density [1] and conceive the economic world to be filled merely with lines of force or 'maximum directions.'"

This appears to us a very remarkable result; contrasted with the view of the ordinary mathematical economist, very much as Bailey's contention that values are nothing but ratios, with the opposed position of Malthus that something of the nature of a real standard underlies value. One way of realising the significance of the new idea would be to observe that, so far as it is accepted, the principle of "Consumer's Rent," as explained by Professor Marshall, becomes inapplicable. The case would arise which has been carefully excepted by Professor Marshall. (See *Principles of Economics*, Book III. ch. iii. § 6, and p. 753.)

We do not understand that Dr. Fisher carries scepticism so far as to consider this case as general. On the contrary, he regards the assumption that the utility of one commodity is independent of that of another as a first approximation which holds fairly well and widely. "In general the interdependence in the shapes of the cisterns (the Demand-curves for different articles) is very slight." It may be added that the more realistic view is at least favoured by the analogies accepted by Dr. Fisher between the principles of maximum energy in Physics and maximum utility in Economics.

There is another "attribute of utility as a quantity" which we may dispense with when we "seek only the causation of the *objective facts of prices and commodity distribution*": namely,

[1] See above, p. 39.

that one man's utility can be compared to another's. Dr. Fisher, who has a just conception of the great gulf which separates economics from moral philosophy, regards comparisons between the pleasures of different individuals as "mysterious" (p. 99) which "do not belong here" (p. 87). At the same time he throws out some hints which will be valuable to the utilitarian.

"The statistician might begin with those utilities in which men are most alike—food utilities—and those disutilities in which they are most alike as the disutilities of definite sorts of manual labour. By these standards he could measure and correct the money-standard, and if the utility curves for various classes of articles were constructed, he could make rough statistics of total utility, total disutility, gain, and utility-value which would have considerable meaning. Men are much alike in their digestion and fatigue. If a food or a labour standard is established, it can be easily applied to the utilities in regard to which men are unlike, as of clothes, houses, furniture, books, works of art, etc." (p. 87).

There are those who think that the principle of final utility is destined to have a more important use in socialistic politics than even in abstract Economics; that, when the regime of competition shall have passed away, the laws of utility will still be employed to regulate utilitarian distribution. Without forecasting a future so remote, we may at least predict to Dr. Fisher the degree of immortality which belongs to one who has deepened the foundations of the pure theory of Economics.

Public Finance. By Professor C. F. BASTABLE. Third edition. (London: Macmillan & Co. 1903. Pp. 780.)

REFERRING for a general estimate of this now classical work to Mr. Price's appreciative review of the first edition in the first volume of the ECONOMIC JOURNAL, we shall here confine ourselves to some of the passages which have been added in the third edition. They relate mostly to recent developments of financial theory and fiscal policy. Under the first head, "the theory of minimum sacrifice as the principle for distribution of the public burdens," the principles of local taxation, "the ever-recurring question of incidence," and other controversial topics are treated. Professor Bastable, referring to diversities of doctrine comprehended under the generic principles of sacrifice, concludes that "these complications in the employment of the sacrifice principle seem to justify adherence to the objective standard of ability,

especially as the practical application of the criterion of 'least sacrifice' is impossible." It is doubtless true that, in our author's words, "the former is most naturally measured by some objective standard, the latter refers primarily to the sentiments of the people concerned, and is therefore rather subjective." Accordingly, the phrase "ability" rather than "sacrifice" is appropriate when a really objective criterion is consistently adopted. For instance, a Government having to raise a certain amount might distribute the burden of taxation solely on *productional* considerations, seeking to minimise the loss of efficiency, the discouragement to industry and enterprise, which the privations and obstructions incident to taxation may occasion. By no means the worst sort of government, if intelligent, we may say, in passing. But we do not understand that Professor Bastable takes up a position thus objective. He is not prepared to make abstraction of what Mill calls with reference to the *sacrifice* theory "human wants and feelings." He continually appeals to justice. He well says that "an escape from the difficult questions that the problem of justice must always present is a pleasing prospect, though unfortunately based on illusion." Professor Bastable, as it appears to us, does not escape these difficult questions by the use of the seemingly definite term "ability." There are those who think that "justice" is not more, but less, determinate than "least sacrifice." Equity in taxation is presumably not definable without reference to "human wants and feelings."

Referring to local taxation Professor Bastable explains the distinction between "onerous" and "beneficial" rates—which serviceable terms, it is interesting to read, seem first to have been employed by Sir G. Murray in the ECONOMIC JOURNAL (III. 701). The desiderated standard of distributive justice is apparently not to be obtained from the contemplation of the English system of local taxation. "There is an entire absence of equity in the actual system of distribution, either as between localities or between the several countries that make up the United Kingdom." In supporting this conclusion Professor Bastable makes frequent reference to the *Memoranda on Classification and Incidence* issued by the Local Taxation Committee.

Their views on incidence also engage his attention. He does not accept "the heroic measure"—proposed by Mr. Cannan—"of discarding the term incidence altogether." Referring to Lord Avebury's address to the Statistical Society on imperial and local burdens, Professor Bastable defends with spirit the judgment which he had before passed on the "diffusion theory" associated

with the name of Canard. Under the head of incidence the case of a strict monopoly is said to be of sufficient importance to receive some special notice. Professor Bastable justly observes that as " in very few cases is a monopoly strictly so called to be found," " the theoretical conception of a pure monopoly is of little direct service in dealing with the question of incidence." Accordingly, he is not to be understood as attaching much importance to one or two specimens which he gives of abstract reasoning about this hypothetical case: *e.g.*, " if a slight rise of price seriously checks consumption, or in other words, if the demand is elastic the monopolist suffers more than in the case of inelastic demand."

Among the recent developments of fiscal policy noticed in the third edition are the new systems of succession duties introduced into France in 1901 and extended in 1902, according to which the duty on inheritance above £2,000,000 payable by relatives of more remote degrees and strangers amounts to 20·5 per cent. The scale of duties is pronounced by Professor Bastable " instructive as showing the arbitrary way in which progressive taxation can be applied." He also notices alterations of fiscal policy in Austria, in the United States, and in Spain. He observes with misgiving the changes which have supervened in our own country, the grave problem for the future constituted by the growth of expenditure, the indications of " a disposition on the part of the predominant political party to depart from the financial principles which have prevailed since 1860." Professor Bastable not only indicates a danger, he has also given us the best means of averting it—sound principles of Public Finance.

Encyklopädie der mathematischen Wissenschaften. Band I, Heft 6. *Anwendungen der Wahrscheinlichkeitsrechnung auf Statistik.* Von LADISLAUS V. BORTKIEWIEZ. Band I. Heft 7. *Anwendungen der Mathematik auf Nationalökonomie.* Von V. PARETO. 1903.

The German Encyclopædia of Mathematical Sciences has very properly included among its constituent treatises two relating to those branches of the human or moral sciences which require the use of mathematics, namely, the more abstract portions of political economy and statistics.

The scope and function of the mathematical method in political economy are indicated by Professor Pareto with that persuasive lucidity which characterises his introduction to the subject in his articles in the *Giornale degli Economisti* and subsequent writings,

among which we take the opportunity of calling attention to the résumé of the course of lectures given at the École des Hautes Études Sociales in Paris (1901–2). The fundamental equations of exchange are derived by Professor Pareto from the conception of utility, or, as he prefers to say, *ophelimity*, which in the mechanics of trade plays nearly the same rôle as the concept of force in mathematical physics. " With the equations given for exchange we must combine the equations of production and capitalisation, and thus we obtain the system of equations which completely determine the economic cycle for the case of free competition." The *simultaneity* of these equations was first clearly conceived by Professor Walras, the distinguished predecessor of Professor Pareto in the Chair of Political Economy at Lausanne. Without this conception, as Professor Pareto says, " useful detailed studies " may be attained, " but no insight into the whole system." When the prices, say p_1, p_2, etc., considered as unknown quantities, depend upon constants entering into several simultaneous equations, it is impossible to specify the particular constant which " determines," p_1 for example, and " it is an unfruitful controversy when one party maintains that this constant is a_2 another party that it is a_1." The unmathematical economist vainly seeks some single attribute as the condition of price or ground of interest.

Among Professor Pareto's original contributions to the subject we may notice his study on the quantitative data with which the mathematical economist has to deal. As we understand Professor Pareto, these data do not comprise measurements of utility : psychical quantities, unlike physical, cannot be expressed as the sum of so many units. The exercise of *choice*, the preference of the economic man for one combination of goods to another, results in a system of *indifference-curves* which are comparable with the isobars or isotherms of physical science in that each successive curve denotes a greater intensity of the attribute under consideration, but differ in that the economic, unlike the physical, curves cannot be each labelled with a number. There is also to be noticed our author's claim to have proved by mathematical reasoning " what is by no means evident *a priori*," that the methods of production, the values of the " production coefficients " would be the same in an intelligent regime of socialism, as it is in the system of *laissez-faire*. The dynamics of the economic system offer an attractive subject to one who is penetrated with the thought that " the analogies between mathematical economics and pure mechanics are numerous and far-reaching (*tiefgriefend*)." Elsewhere Professor Pareto has made reconnaissances in the almost

unexplored region of economic *dynamics*, understanding that much-abused term in a genuine mathematical, not a vague biological signification. Here the leader contents himself with a Pisgah prospect, while he sagely thus concludes: "It is wiser not to anticipate (*vorzugreifen*) the future. For the present it is only the *static* of political economy that has been scientifically constructed and has produced useful results."

The leading part which is played by the theory of exchange or law of demand-and-supply in abstract economics is matched by the position of the law of error in the higher statistics. Professor Bortkiewiez shows how that law is applied to the solution of certain problems which we will illustrate by an English example, that which is afforded by Jevons' examination of nearly 100,000 sovereigns circulating in different parts of England. Sorted according to their date, these samples presented the following percentages :—

1817–19.	1820–29.	1830–39.	1840–49.	1850–59.	1860–67.
0·2	7·4	7·0	16·9	28·6	38·3.[1]

To what degree of accuracy, within what limit of error can we be reasonably sure that if all the sovereigns in England had been counted, the proportions between the numbers of sovereigns bearing dates respectively 1817–19, 1820–29, and so on, would have corresponded to the proportions presented by the sample 100,000? For instance, is it practically certain that the actual number in all England of sovereigns dated 1820–29 was greater than the number of those bearing date 1830–39? How many samples are required to afford this certainty? If the simple treatment of such problems with which Laplace and Poisson were content is to be adopted, it must be granted that the samples were such as would have been obtained if we supposed all the sovereigns in circulation to be collected into one enormous box and a batch of 100,000 coins to be drawn therefrom at random. But things in the concrete are seldom so obligingly simple. Thus, in the case before us, there is reason to believe that the percentages of sovereigns bearing any assigned date were not the same in the different parts of the country where samples were obtained. It is as if the 100,000 samples taken at random were not all taken from one box, but some from one and some from another of several boxes in which the proportions between the number of coins bearing each date were not identical. When there exists this

[1] *Investigations in Currency and Finance*, p. 274. *Cp.* p. 292. The sum of the percentages above quoted are less than 100 by a matter of 1·6 pertaining to Australian sovereigns.

sort of heterogeneity in the sources from which the samples are derived—this abnormality as it has been called with reference to the simplest species of sortition—then the regulation method of eliminating chance, prescribed too generally by the older mathematicians, becomes, as Professor Bortkiewiez observes, "illusory and worthless."

In what cases then may this sort of abnormality be expected, on what conditions does it depend? The answer to this interesting question is given in the work before us, read in connection with the author's important treatise *On the Law of Small Numbers.*[1] We may partially illustrate his theory by our example. Supposing that several hundred thousand, instead of one hundred thousand, sample sovereigns had been taken, then the rule proper to the hypothesis of a simple sortition with as it were a single box, becomes less accurate; it is less accurate also when applied to the class of sovereigns dated 1850–9, or that dated 1840–9, than to the much rarer class of sovereigns dated 1817–9, other things being the same. But what those other things are, it is not easy to state with tolerable brevity in plain prose without the aid of symbols.

Considering how frequently the method of eliminating chance prescribed by Laplace proves illusory, we could wish that Professor Bortkiewiez had pronounced more decidedly upon the validity of a substitute which has been proposed. Suppose that a certain class of observed frequencies, such as birth rates for a series of years, do not behave like the proportions in samples taken from a single box, still may we not apply the law of error to this class of statistics for the solution of problems like those above examined, if we employ a coefficient of dispersion—a standard deviation or modulus—determined not on the "combinational" model, to use Professor Lexis' terminology, but according to the "physical" method, the data for which might have been obtained by observing the dispersion of birth rates at different times and places in previous experience?[2] Doubtless that empirical result would never rest on so large an inductive basis as the combinational coefficient. The procedure too would be at best provisional. We might always hope to break up the material into smaller categories characterised by the more satisfactory species of dispersion.

We have not left ourselves space to consider Professor Bortkiewiez's application of his principles to tables of mortality and sick-

[1] *Das Gesetz der kleiner Zahlen*, Leipzig: Teubner, 1898.

[2] Cp. *Journal of the Statistical Society*, December 1885.

ness. And we can only allude to the statement of general principles given by another authority, Professor Czuber, in the same volume. His concise treatise on the Calculus of Probabilities (Heft I) forms a good introduction to his well-known larger works.

The History of Trade Unionism. By SIDNEY and BEATRICE WEBB. (London: Longmans, Green & Co. Pp. 558. 8vo.), 1894.

GREAT expectations have naturally been excited by the co-operation of two authors each of whom has, independently of the other, won a high reputation. These expectations are not disappointed, and *The History of Trade Unionism* by Mr. and Mrs. Webb will probably retain in economic literature a place as high as, or even higher than, *The Co-operative Movement* by Miss Beatrice Potter.

This praise will appear deserved, whether we consider the matter or the form of the work.

The gratitude and admiration of all genuine students will be excited by the laborious zeal with which the authors have compiled the materials of their history. Hundreds of references attest their diligence; a bibliography of forty closely-printed pages measures the extent of their researches. Obscure pamphlets and defunct newspapers have been scrutinised, remote provincial libraries have been put under contribution. It is tantalising to hear of many authorities which are not to be found in the British Museum; for instance, E. C. Tuffnell's *Character and Effects of Trades Unions* (1834), which is described as "perhaps the best statement of the case against Trade Unionism."

The writers obtain a great advantage from having cultivated the acquaintance of the living leaders of the movement which forms their subject. From this source has been derived much information inaccessible to the general public. In many a working man's home, we are told, the descendants of the old skilled handicraftsmen have unearthed "grandfather's indentures," or "father's old card," or a tattered "set of rules." In short, so great efforts, and with so much success, have seldom been made to dissipate the obscurity which envelops *les origines*.

The mass of material would have proved unmanageable in less skilful hands. A crowd of homogeneous events, the homely incidents of industrial discord—for the most part unrelieved by the interest which attaches to commanding personalities—would not have impressed our imagination, nor have been retained in

our memory. The thread of the narrative, as it were spun out of too short fibre, would have broken short. But the literary power of the authors holds together the diffuse materials by the attraction of general ideas. It is thus that the scattered incidents of Trade Unionism in the eighteenth century are grouped round the thesis that the cause of Trade Unionism is the divorce of the worker from the ownership of the means of production, a cause which made itself felt even before the rise of the factory system. The struggles which that system provoked were animated by the desire of the Unionists to maintain their standard of life against the inroad of the new principles of *laissez-faire*. In this struggle the ancient practice of regulating wages by authority proved a rusty weapon. The unionism of a later generation contemporary with the Reform Bill, is characterised by the idea of a general federation between the operatives in different industries—a Trades, as distinguished from a Trade Union. Our authors, we believe, have been the first to call attention to the existence of this sort of New Unionism, as we should now call it, sixty years ago. The movement seems to have been largely due to the inspiration of Robert Owen. The soberer talents of Newton and of Allan and Applegarth founded in the 'fifties the more solid structure of what would now be called Old Unionism. The transition from the Old to the New Unionism is traced with great skill by the historians. The history concludes with a description of the Trades Union world as it is at present, or at least was at the end of 1892. The number of unionists is placed between 1,500,000 and 1,600,000. Of these about half belong to the three staple trades of coal-mining, cotton manufacture, and engineering. To the class of non-unionists belong for the most part agricultural labourers and other labourers, as distinguished from operatives in mines and factories, and women.

The general views so clearly presented in the course of the history include, no doubt, a certain element of hypothesis. This is especially the case as we approach the burning problems of contemporary politics. The writers themselves apprehend that their interest in the new movement may "deprive their narrative of the critical impartiality which they have throughout this historical volume striven to maintain." A very different yet equally plausible interpretation of motives and explanation of events might probably be presented by historians of an opposite political bias, possessed of equal learning and literary skill. The latter conditions no doubt would not be very easy to fulfil.

But, allowance being made for the personal equation incidental

to observations on human affairs, the accuracy of the history appears to be above suspicion. The good faith of the historians is guaranteed by the freedom with which they censure those with whom they are in general agreement. Thus there is attributed to Robert Owen "the confident sciolism and prejudice which has led generations of Socialists to borrow from Adam Smith and the 'classic' economists the erroneous theory that labour is by itself the creator of value." Of a later generation of Trade Union leaders it is written that "they brought to their task no consistent economic theory or political philosophy." In fact they used arguments which were "perilously near cant." The futility of the Trades Union Congress as at present constituted is exhibited with a freedom which hardly any writer in the Capitalist press would venture to imitate.

One characteristic of Trade Unionism which the history brings out might not have been expected by the middle-class reader—namely, the existence in these democratic bodies of certain aristocratic tendencies. The older Trade Unions, we read, were regarded by the gas-stoker or docker as aristocratic institutions with which he had as little to do as with the House of Lords. The "selfish, snobbish desertion by the higher grades of the lower" is complained of by one of the new leaders. The besetting sin of Unionist officials as described in the lively picture given by one of them, which has been inserted in the history, is the ambition to figure as a "superior person." The New Unionists indeed profess wider sympathies. But, if we mistake not, their principle of a living wage involves something of aristocratic exclusiveness. If, as Dr. Smart well argues in a paper to which we referred lately (ECONOMIC JOURNAL, IV. p. 367), only those who are considered worth the minimum wage would be employed, "the proposal which is often condemned as socialistic is strongly the other way." But to justify this impression we should have to go outside the volume before us; which holds up to view the weak points of the older Trade Unionism rather than those of the brand-new Collectivism.

The candid while sympathetic description of Trade Unionism is calculated to be instructive both to the middle classes and the workers themselves. On the one hand the capitalist and employing classes are taught to respect the purpose which Unionists have pursued with such firmness and wisdom for generations, the maintenance of the standard of life. The means too through which this end has been pursued by the workers, namely, "collective bargaining," is justified; the favoured classes are converted from

the monstrous doctrine that the ideally just arrangement is that which results when a single employer, or a small knot of employers, deals with a crowd of uncombined workmen competing against each other.

On the other hand the Trade Unionists have much to learn from the example of past failures, and from the precepts of their soberest leaders; we allude to Applegarth and his associates, in particular T. J. Dunning, whom our authors agree with Mill in esteeming. (*Cp.* Mill, *Political Economy,* Book V. § 5.) 'From the references given in the notes, if not from the text, may be obtained warnings against the danger of the extreme position that the whole produce of industry belongs of right to those who have contributed to its production muscular exertion.

Thus some advance is made towards the solution of the most difficult problem in practical economics, the determination of the just mean between the extreme limits to which labour on the one hand, or brain power with capital on the other, would if exercising the full power of monopoly push the other party. On this momentous question we may expect additional light in our authors' next volume, which will deal with the Problems of Trade Unionism.

Natural Value. By PROFESSOR FRIEDRICH VON WIESER. Edited with a preface and analysis by WILLIAM SMART, M.A., LL.D. The translation by CHRISTIAN A. MALLOCH. (London: Macmillan & Co. 1893.)

IN this volume Dr. Smart, assisted by Mrs. Malloch, continues the important work, which has already been greeted with applause in this Journal,[1] of presenting the doctrines of the Austrian school in an English version. Mrs. Malloch by an easy and elegant translation saves the English reader from the trouble of penetrating the original German. Dr. Smart saves him from the trouble of perusing even the translation. For there is hardly any important point in the book which is not adequately set forth in the editor's preface.

First comes the theory of marginal utility; a valuable exposition but of which the value, as measured by marginal utility, is somewhat diminished—to turn the theory against its own followers—by the abundance of expositions already in existence;

[1] See Review of Professor Böhm-Bawerk's *Positive Theory,* translated by Dr. Smart. (Above, p. 22.)

many of them, it should be gratefully remembered, emanating from the Austrian school. We do not complain of having too much of a good thing; but we regret that it should be made the enemy of a better, or at least an equally good thing; that the principle of marginal utility should be so affirmed by the Austrians as to deny the principle of cost. Dr. Smart, as usual, puts the matter in a nutshell :—

" Just as the value of a stock is determined by its dividends, so do all elements of production get their value from the value they help to produce—an illustration which will be found very helpful generally."

Very helpful indeed, as it places us at the exact point where the Austrians diverge from, or lag behind, those who walk in the way of Ricardo. The former have not advanced far beyond that first stage which consists, in Professor Marshall's words, of " those temporary equilibria of demand and supply in which the cost of producing the commodity exerts either no influence or merely an indirect influence." [1] The disciple of the Austrian school so far as he is consistent, contemplates only the market value of stock; he does not carry his mind to the motives which led to the creation of that stock. According to him a mineral spring which " gets its value from the fact that its water is found adapted to certain wants of humanity " (Preface, p. xix) differs from " the case of production goods in general " only in a respect which may appear to the opposite school quite unessential, viz. " that the mineral water is the one and only product of the spring, while such production goods as coal, iron, unskilled labour are as it were wells of many waters." The Austrian school invoke the authority of Jevons; but they have not realised his conception that economic equilibrium depends upon (*inter alia*) the amount of effort and sacrifice considered as an independent variable.[2] It is not open to them to consider the worker—personally or through the vicarious action of parental providence—adjusting his occupation so as to obtain a minimum of toil, or a maximum of net advantages.

That is, we mean, the legitimate implication of the theory. For of course no dogma is held so strictly by a man of sense and ability but that he will deviate into correct statements of fact. Accordingly we shall find in some passages of Professor Wieser's work a grudging acknowledgment of the truths to which we have adverted.

[1] *Principles of Economics*, Book V. ch. ii.

[2] *Theory*, ch. v., referred to by the present writer in the review of Dr. Smart's " Introduction to the Theory of Value." (Above, p. 32.)

"The circumstance that expenditure of labour is felt to be a burden must somewhat affect the selection of employments to which it is devoted. It may occur as Sax has forcibly shown that a less useful employment of labour is chosen before a more useful one because the latter requires comparatively a greater amount of exertion" (p. 198).

But after all, as all science implies abstraction, it is no particular objection to a writer that he should confine himself to a single aspect of the subject. Why should not an economist treat only of market value, just as an historian—or at least an historical novelist [1]—might regard war as altogether an affair of battles, abstracting the directing genius and plan of the campaign which massed the contending troops upon the battle-field? We do not think worse of the epic poet because he does not "date the Trojan war from Leda's eggs" [*gemino ab ovo*].

It is hardly a matter of reproach then to the author that he should demarcate a narrow field; especially as it is one particularly amenable to abstract reasoning. But it may be complained that he has obscured the one subject in Political Economy which admits of exact scientific treatment by his mysterious doctrine of "imputation." This is "a principle which will divide up the return and impute it to its factors." [2] In Dr. Smart's words:—

"Suppose a man's life were to depend on his last shot. The value of rifle and cartridge together is clear enough; but there is no means of ascertaining the value of each. Here are two unknown quantities and but one equation:—$x + y = 100$. How does this differ from the value turned out by the co-operating factors in any organised production? In this, that each factor enters into multitudes of different combinations with returns of different values. There are multitudes of equations between production goods and values of return, and every production good can be traced as it enters into other equations. For instance, if labour works with various materials, and the return in each case has a different value, it is possible from the number of equations to come to a quite accurate understanding of what is due to each separately. If $x + y = 100$, and $2x + 3z = 290$, and $4y + 5z = 590$, $x = 40$, $y = 60, z = 70$." (Editor's Preface, p. xiv; *cp.* Book III. ch. v.)

Compare the author himself:—

"Every productive factor, if it is to be effective, must be combined with others and join its action with theirs; but the

[1] *Cp.* Tolstoi's account of the battle of Borodino.

[2] Table of Contents referring to Book III.

elements that are bound up with it may alter, and this fact makes it possible for us to distinguish the specific effect of each single element, just as though it alone were active.

"It is possible not only to separate these effects approximately, but to put them into exact figures, so soon as we collect and measure all the important circumstances of the matter; such as the amount of the products, their value, and the amount of the means of production at the time. If we take these circumstances accurately into account, we obtain a number of equations, and we are in a position to make a reliable calculation of what each single instrument of production does. To put in the shortest typical formula the full range of expressions which offer themselves we have, for instance, instead of the one equation $x + y = 100$, the following :—

$$x + y = 100.$$
$$2x + 3z = 290.$$
$$4y + 5z = 590.$$
$$\text{Here } x = 40,\ y = 60,\ z = 70."$$

This theory appears to us to present some difficulties and no advantages. We may distinguish (*a*) the singular case of individual producers, (*b*) the ordinary case of production in a regime of competition.

(*a*) In the first case it seems difficult to attach any definite meaning to the "imputed" share. Let us modify the author's example of the hunter by supposing that rifle and cartridge procure, not the hunter's life, but some more finite good reckoned as 100. So far "all that can be said as to their value lies in equation $x + y = 100$." Now suppose that with a rifle and *two* cartridges the hunter can bring down more game, but not twice as much—the game being startled by a first shot. There would be obtained then, if we rightly understand the doctrine, a second equation of the form $x + 2y = 180$. Subtracting the second equation from the first we have $y = 80$. Thus a value of 20 is "imputed" to the rifle and to the cartridge 80. Can it be seriously maintained that this conception is appropriate; that this proposition has any correspondence with economic or psychologic experience? What is the signification of the equations in a case which might well arise of two cartridges with a rifle being worth more than twice one cartridge with a rifle; say owing to the advantage of securing wounded game by a second shot? In such a case we might have $x + 2y = 250$ for our second equation. Whence $y = 150$, $x = -50$. The rifle is worse than valueless!

(*b*) In case of a regime of competition an intelligible meaning may be assigned to the share of a factor in contribution, namely the normal value of the last increment of the factor; which is theoretically equal to the amount of product due to the increment.[1] It is doubtful whether Professor Wieser aims at this object; it is certain that he does not hit it fair.

We have upon this view a problem of the sort which has been treated mathematically by Professor Marshall, Professor Walras and others. The case would seem to be that of a "Joint demand" for the articles x, y, z, to be used in various proportions in the production of three articles which might be called u, v, w. For simplicity we may suppose the supplies of x, y, z respectively and the demands for u, v, w respectively not to be "Joint." In order to determine the value and amount of each productive factor, the proportion thereof employed in each industry, and the value and amount of each product, we have then just as many equations as there are unknown quantities.[2] These equations

[1] *Cp.* Marshall on the "Marginal Shepherd," *Principles*, p. 567. The amount of product added by the addition, or subtracted by the subtraction, of the increment. The two, or rather three, attributes united by this definition become separate when we consider, instead of increments, finite large amounts of a factor of production. In the latter case we may adopt any *one* of the attributes as the definition of the share attributable to the factor—query if with much advantage. Compare note on p. 243.

[2] For a statement and formulation of the conditions of economic equilibrium see Professor Marshall, *Principles of Economics*, especially Book V. and *Mathematical Appendix*, notes, 14—21; also Professor Walras, *Éléments d'Économie Politique pure*. The following adumbration of the general idea may assist our readers.

Let us confine ourselves to two commodities u and v: into which enter two factors of production x and y; into u, x_1 y_1, into v, x_2 and y_2. Let π_1, π_2 be the prices of x and y respectively, p_1 and p_2, of u and v respectively. We have for the ten unknown quantities x_1 x_2, y_1 y_2, u, v, π_1, π_2, p_1, p_2 the following ten equations:—

(1) $x_1 + x_2 = \phi_1(\pi_1)$, where $x_1 + x_2$ is the amount of x supplied at the price π_1.

(2) $y_1 + y_2 = \phi_2(\pi_2)$, where $y_1 + y_2$ is the amount of y supplied at the price π_2.

(3) $u = f_1(x_1, y_1)$, where $f_1(x_1\, y_1)$ denotes the amount of the product resulting from the employment of the factors x_1 and y_1.

(4) $v = f_2(x_2\, y_2)$, with a like interpretation.

(5) $u = F_1(p_1)$, where u is the amount of the first commodity demanded at the price p_1.

(6) $v = F_2(p_2)$, with a like interpretation.

(7) $dx_1 \dfrac{df_1(x_1\, y_1)}{dx_1} p_1 = dx_1\, \pi_1$; since the application of x_1 will be pushed up to the point where the additional gain is just balanced by the additional cost. For a like reason,

(8) $\dfrac{df_1(x_1\, y_1)}{dy_1} p_2 = \pi_2$.

(9) $\dfrac{df_2(x_2, y_2)}{dx_2} p_1 = \pi_1$.

(10) $\dfrac{df_2(x_2\, y_2)}{dy_2} p_2 = \pi_2$.

may be compared to those of mathematical physics in that from known conditions they afford inferences concerning unknown quantities. For instance, if the supply of one of the factors, x, increase, it may be presumed that the value of the other, y, will increase [1] more or less according to the expansibility or elasticity [2] of the demand for the products u and v, the extent to which the production of each article is increased by an increase of either of the factors employed, and the elasticity of the supply.[3] Professor Wieser makes some very simple inferences of this sort; [4] but, it is submitted, by the light of common sense, not in virtue of his peculiar doctrine of "imputation."

Professor Wieser's equations [5] are not comprised in ours; but they are deducible therefrom or from the same fundamental conditions. But how ineffectual the proposed system is may be understood from the fact that the author seems to think the problem indeterminate if the number of equations each furnished by a combination of production factors be not at least equal to that of the commodities.[6] Whereas, according to the genuine

[1] Assuming a certain simplicity in the form of the functions with which we are concerned.

[2] The term employed by Professor Marshall.

[3] The character of the functions F_1 and F'_2, f_1 and f_2, ϕ_1 and ϕ_2.

[4] E.g., *Natural Value*, p. 103.

[5] I suppose Professor Wieser's equations to be in my notation (in the case of two variables, *e.g.*),

$$(a)\ \Delta x_1 \frac{df_1}{dx_1}\pi_1 + \Delta y_1 \frac{df_1}{dy_1}\pi_2 = \Delta u\, p_1,$$

$$(b)\ \Delta x_2 \frac{df_2}{dx_1} + \Delta y_2 \frac{df_2}{dy_2}\pi_2 = \Delta v\, p_2.$$

There must be assumed, I think—what is not in general a necessary assumption—that Δx_1 and Δy_1 have a fixed relation between them. Say they are equal small units; then our $\Delta x\pi_1$ would correspond to Professor Wieser's x, our $\Delta y\pi_2$ to his y; and if (in a particular case) $\frac{df_1}{dx_1} = 1 = \frac{df_1}{dy_1}$, equation (a) will be identical with his equation $x + y = 100$; supposing that the application of a unit of x and a unit of y results in an amount of product of which the value is 100. We have thus in (a) one equation for determining the value of x and y. A second equation is afforded by (b).

This is, assuming that the author's x, y (and z) may be regarded as marginal increments; as Dr. Smart appears to intimate (Preface, p. xiv, last par.). It should be observed, however, that much of the author's reasoning presupposes considerable quantities as distinguished from increments. Thus the mighty distinction which he draws at Book III. chs. vi., vii. between the "share dependent on co-operation," as calculated in the case of a cart-horse, for instance, "by the diminution of return which would ensue were the farmer to lose the horse, and be forced to go on without it," and the "productive contribution" as calculated by his own equations, is not agreeable to the conceptions of the differential calculus.

[6] "It is because the productive elements enter into innumerable combinations, each with different values, that we get, by a method of equations, the contributions

mathematical method, the number of articles into which the factors enter in different combinations is a matter of indifference. The system would be equally determinate if there were only *two* combinations with three factors of production.[1] How little the proposed method follows the analogy of natural philosophy may be understood from the fact that the number of the unknowns may well be exceeded by the number of the equations; as the author seems to admit without surprise, p. 90.[2] We miss what Professor Marshall calls "the chief use of pure mathematics"—"to make sure that he [a person] has enough and only enough premises for his conclusions (*i.e.*, that his equations are neither more nor less in number than his unknowns)."[3]

Altogether the proposed equations seem to be of little assistance in the main problem of economics, the determination of the equilibrium of demand and supply. The genuinely mathematical method might be compared to a theory of the tides which from conditions relating to the causes thereof enables us, by a determinate system of equations, to predict more or less accurately the height of the tide at given hours. The quasi-mathematical Austrian method may be compared to a set of equations connecting the unknown quantities with certain empirical data; for example the heights of the tide at two assigned times with the difference between the volumes of water at the two times in each of two rock basins whose shape is known. The number of such "observation-equations," as they may be called, might far exceed the number of the unknowns; and it is conceivable that the reduction of such observations might afford the handiest method of measuring the required heights. But it would be very odd to regard such equations as a substitute for the theory of the tides.

It may be doubted indeed whether the indirect mode of observation would ever be resorted to; or, dropping the metaphor, whether the producer would ever resort to the Wieserian equations to determine the share attributable to the productive factors or portions thereof. It should not be concealed however that the

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imputed to each." Table of Contents, referring to Part I. ch. v. *Cp.* p. 86 and p. 94, 3rd par.

[1] P. 90.

[2] In the case discussed in last note where there were only two articles, let one, say v, fall out; and with it x_2 and y_2 and p_2. There will remain only six unknown quantities for which there remain six equations, viz. (1), (2), (3), (5), (7), (8). The system is still determinate.

[3] *Principles of Economics*, Preface to first edition, p. xv.

analysis commends itself to Dr. Smart's "practical experience." We refer to one of the most instructive passages in the volume (Preface, p. xiv.) in which Dr. Smart records his experience, that of an old entrepreneur, in the matter of "osting."

Differing thus fundamentally from Professor Wieser's cardinal principle we could not usefully act as the interpreters of the propositions which he connects with it. It must be left to others to discuss the "natural value" of capital and labour; and to decide how much truth is contained in the following passage:—

"Monopoly goods have often received a quite peculiar position in theory. Ricardo, for example, teaches that they owe their value altogether to their scarcity, while all other goods receive their value from the labour of producing them. A sufficiently wide consideration, however, shows that monopoly goods come altogether under the ordinary conditions of valuation, and differ from other economic goods only in that they display more strikingly the character common to all."

Nor will it be attempted here to examine the argument that "a general rent . . . where all qualities of lands and all powers of the land, even those of the lowest class, are required to meet the demand" . . . must enter into costs [1]—or to estimate what weight is added by Professor Wieser to a balance in one scale of which is the authority of J. S. Mill [2] and in the other scale that of Professor Marshall.[3]

It remains only to notice the topic from which the book derives its name. Here is the author's definition:—

"The value which arises from the social relation between amount of goods and utility, or value as it would exist in the communist state, we shall henceforth call 'Natural Value.'"

An important principle is no doubt suggested in this passage and the following and their contexts: [4]

"It would be impossible to obtain a more exact and distinct measure for the thousandfold variety of economic satisfactions than that afforded under the necessary conditions by the marginal value of goods." [5]

In fact Professor Wieser's vague idea of somehow employing

[1] *Natural Value*, Book, V. ch. xii.

[2] *Political Economy*, Book III. ch. v. § 2, par. 3: "It [Rent] might do so [form part of the cost of production], and very largely too." *Cp.* Book III. ch. ii. § 2, par. 1: "On countries fully occupied and cultivated."

[3] "On Rent," ECONOMIC JOURNAL, March 1893, and passages in the *Principles of Economics* there referred to.

[4] *Natural Value*, Book II. ch. vi.; Book VI. ch. iii.

[5] Compare the author's statement in the first volume of the ECONOMIC JOURNAL, p. 120.

the economic conception of utility so as to assist an administration aiming at the good of the community appears to be partially realised by the principle of *Consumers' Rent.*

Women's Wages. By WILLIAM SMART. (From the Proceedings of the Philosophical Society of Glasgow), 1893.

MR. SMART makes some contributions to the solution of the difficult question: "Why is women's wage less than that of a man?" Enumerating several commonly alleged reasons, he observes that each of them "is at best a half truth"; taken singly, it does not account for all the phenomena. Thus, the fact that women are not the sole breadwinners of the family is often confidently stated as a sufficient answer to the question; as if, forsooth, in an open market two similar commodities, two equally efficient agents of production, may be expected to sell at different prices.

"To the purchaser it is indifferent whether the cloth he buys wore out the fingers and heart of a woman, or only took a little tear and wear out of a machine. The one question he asks is: How will the cloth wear? *Caveat venditor.* If a man-worker, then, is supposed to get a high wage when he produces much, a low wage when he produces little, why should a woman's wage be determined by another principle?"

The labour-market is not free, it is clogged by custom. The action of custom is thus illustrated by Mr. Smart from a trade with which he is specially acquainted:—

"In the cotton thread trade, spooling—that is, winding the thread on the small bobbin familiar to every workbasket—was for many years done by women sitting at single machines not unlike sewing machines, filling one spool at a time. The customary wage was sixpence per gross of 200-yard spools; a good worker could spool at least four gross per day, and make twelve shillings a week. As in all industries, machinery was gradually introduced by which cunning arrangements of mechanism did the greater part of the work; instead of turning out one spool at a time the girl now watched the machine turning out six, or nine, or twelve spools. When these machines were introduced, how were the wages determined? For a few weeks the girls were put on day wages, and when the machines were in good working order, and the average production per machine had been ascertained, the piece-work rate was fixed so as to allow of the

girl making the same average wage as she did before. That is to say, if the new machine turned out in the same time six gross for every one gross turned out by the hand machine, the price of labour per gross was reduced from sixpence to one penny, and the wage continued at the customary level."

He concludes that, "in more cases than we would believe the wage of women-workers is a 'customary wage' fixed at a time when the world was poorer and capital was more powerful."

The question why equal wages are not obtained by women as compared with men for equal work is not dismissed by Mr. Smart as insignificant, because, as a matter of fact, men and women do not generally work side by side at identical tasks. Observing that "there is a certain well-marked relegation of women-workers towards certain ill-paid trades, while at the same time there is as well-marked a movement of men towards the better-paid trades," he re-states the question thus: "Why are men and women employed in different groups of employment? And comparing these two groups, why is the wage-level of skilled female labour lower even than that of unskilled male labour?" The answer which Mr. Smart gives to the question thus generalised is worthy of being read along with Mrs. Fawcett's important contribution to the subject in the ECONOMIC JOURNAL (March 1892). For securing a fairer wage for women Mr. Smart has two recipes: Organisation for the "protection of the average working women against the more helpless members of her own sex," and the enlightenment of the public conscience.

PROFESSOR BÖHM-BAWERK ON THE ULTIMATE STANDARD OF VALUE. 1894.

IN some last words on *Der letze Maastab des Güterwertes* [1] Dr. Böhm-Bawerk makes an important contribution to that higher theory of value which may be regarded as the metaphysics of political economy. Stating the views of the Austrian School and its opponents with a clearness and candour almost unparalleled in controversial literature, he enables us to discern that the opposition is slighter than may have been supposed. For it appears to consist principally in a different estimate of quantities which do not admit of exact measurement. I speak on behalf of those who hold, in opposition to the Austrian School,

[1] *Zeitschrift für Volkswirtschaft*, etc., 1894, Band III. Heft 2.

that there is not one ultimate standard, but two ultimate standards : utility and disutility.[1]

Against this view Dr. Böhm-Bawerk argues : It is not in general open to the worker to vary the amount of his day's work, and accordingly the disutility of work cannot be regarded as an ultimate standard. The first clause of this argument may be admitted, I think, without much reservation.[2] It is a very abstract conception with Jevons to regard the workman as varying the amount of his labour so that the disutility of the last hour's work may just be compensated by the utility of the last hour's pay. But the second clause of the argument has received less attention. I for one must confess to having not sufficiently attended to this consideration, when assuming that even though the final disutility of work is not variable, yet in virtue of the worker's power to change his occupation [3] labour may be regarded as determining value co-ordinately with utility.

In reconsidering this delicate issue, let us employ an exact terminology; for the ordinary phrases, value " depending on " or being " regulated " or " determined " by cost of production, are inadequate to express the nice shades of mathematical conception. Let us say, then, that disutility, or real cost in the sense of efforts and sacrifices, is an ultimate standard of value when the expression for the " net advantage " of all parties concerned—the maximum of which determines economic equilibrium—involves disutility as a variable in such wise that, when the maximum is approached by the change of this variable, the value of commodities tends to correspond to amount of effort and sacrifice required for their production; the value being higher or lower according as the disutility is greater or less.

According to this definition, if the quantity of labour and sacrifice be regarded as constant, then, disutility not being a variable, it is not an ultimate standard; economic equilibrium being brought about in the manner explained by Dr. Böhm-Bawerk.[4]

Again, suppose that industrial competition, freedom to change occupations, does not prevail. In this case, though

[1] Or Real Cost, in Professor Marshall's phrase. I cannot plead guilty to having made any interchange (Böhm-Bawerk, p. 208) between the ideas of real and money cost. The confusion is very unlikely to be made by any follower of Professor Marshall.

[2] But see below, p. 62.

[3] See Address to Section F, British Association, 1889. (a).

[4] In the last section of the article under consideration.

the expression to be maximised involves disutility as a variable, yet this variable would not be regarded as an ultimate standard, because the conditions of economic equilibrium are not such that value tends to correspond to disutility.[1] In a regime of international trade an increase in the difficulty of producing an article may be attended with a diminution in its value.[2]

Thus the fulfilment of the proposition that disutility is an ultimate standard of value is only to be sought where the amount of labour (and sacrifice) is not regarded as constant, and where industrial competition prevails.

Over what extent of the industrial world do these conditions hold? That is the whole question. Professor Böhm-Bawerk—of course without pretending to precision, merely by way of illustration (p. 224)—assigns one part out of twenty to disutility. I submit that this is too low an estimate, in view of the following considerations.

(1) Disutility may be regarded as an independent variable so far as it is open to the worker to change from an unpleasant occupation if not compensated for its unpleasantness. I do not follow what Professor Böhm-Bawerk says on this head: "In these cases it is not the absolute height of the toil or disutility (*Arbeitsleide*) to be undergone which determines the absolute height of the wage; but it is the differences in the toil which call forth corresponding differences with respect to a normal height of wage" (p. 203). The essential point is that the desire of diminishing disutility is one of the motives which bring about economic equilibrium.[3]

(2) Again, the efforts and sacrifices required for the education of trained labour are probably to a large extent to be regarded as independent variables. Professor Böhm-Bawerk finds difficulty in reconciling the following two laws: (1) the law which follows from the assumption just made—namely, that the earnings of trained labour must correspond to the cost of production of, the efforts and sacrifices required for the preparation of the

[1] The universally admitted circumstance that the law in question does not hold where there are non-competing groups is flourished by Professor Böhm-Bawerk as a *recherché* argument against the law (p. 205, end).

[2] See the present writer's article on "International Value," ECONOMIC JOURNAL, Vol. IV.

[3] Economic equilibrium will be effected by (1) the tendency of each to seek occupations specially suited to himself; (2) the tendency of all to seek occupations which on an average are least unpleasant. It is only the latter tendency which constitutes disutility an "ultimate standard" according to the definition here adopted; since the former tendency cannot, I think, be regarded as resulting in a correspondence between value and quantity of disutility.

artisan; and (2) the law which follows from the tendency of utility to a maximum that the remuneration of the last workman taken on, the "marginal shepherd," is just equal to the increment of production due to him (p. 210). But from a mathematical point of view there is no difficulty in accepting both conditions of equilibrium. As Professor Böhm-Bawerk himself admits in an earlier section (p. 200)—for the first time perhaps in the exposition of the Austrian view—there may be two co-ordinate "factors" or standards, disutility and utility; if the amount of disutility be regarded as variable. Well, if the efforts and sacrifices required for the training of labour are so regarded, there will result two independent conditions of equilibrium embodied in the laws above stated; there is nothing circular (p. 215) in the relation of these laws; any more than there is in the simultaneous equations which express the conditions that a function of two variables should be a maximum. The only question is how far variable efforts and sacrifices do enter into the production of labour. If the quantity and quality of labour be regarded as fixed, then no doubt the second law alone holds good. This seems to be the portion of truth in Professor Böhm-Bawerk's polemic against Professor Marshall (§ 5).

(3) The amount of the day's work is perhaps more variable than Professor Böhm-Bawerk admits (p. 203). Has he considered the extent to which piece-work prevails?

For these reasons I submit that the part played by disutility is greater than Professor Böhm-Bawerk allows; while I admit that, upon what may be called the general Ricardian assumption of a fixed quantity of labour distributed among different industries so as to secure equal remuneration for equal amounts of labour, the explanation given by Professor Böhm-Bawerk would be correct—utility, without disutility, would be the ultimate standard. [The above appeared September, the sequel, December, 1894.]

I forbear to reply to the questions of purely personal or literary interest which are raised by Professor Böhm-Bawerk in his opening paragraphs: whether I have put a natural interpretation on his early utterances about cost, or how far he is justified in attributing to his predecessors a confusion between cost in the sense of expense and disutility. I confine myself to the differences between us which are enumerated by Professor Böhm-Bawerk on pp. 721, 722. [ECONOMIC JOURNAL, 1894.]

I. Professor Böhm-Bawerk thinks that I have exaggerated the interaction between the severity of labour and the value of

the product in piece-work. I think that I understated my case by omitting to observe that this interaction extends further than appears, in so far as even in the case of day-labour beneath the apparent fixity of hours there frequently underlies a tacit treaty as to the amount of work to be done. The difference between us, in the estimate of a quantity not susceptible of exact measurement, is not likely to be removed by controversy. One can only refer the umpire reader to statements and facts—in particular, Mr. Schloss's *Industrial Remuneration* and the evidence before the Labour Commission—and ask him to form his own estimate.

II. The difference between us as to the influence of the efforts and sacrifices required for the education of trained labour is of a similar character. However, the question here may be in part only verbal: so far as the privations incurred by parents to provide for the education of children, being regarded merely as an exchange of present for future goods, are referred to the category of utility rather than disutility.

III. The difference between Professor Böhm-Bawerk and myself under the third of his heads may also be only one of words. But I do not speak confidently, as I do not quite understand his doctrine of an "absolute normal level" (p. 722, par. 4), even when it is interpreted by the parable of the rich man on the mountain. I could best explain myself by altering the parable to suit my own views.

Let us suppose, not one rich man, but several rich men, about to ascend, some an easy mountain, some a difficult one; each ascent occupying a day (*loc. cit.*). And let these rich travellers enter into negotiations with a set of porters who may be supposed many times more numerous than the employers. An arrangement according to which the remuneration for ascending the easy and the difficult mountain was the same could not stand; it would not be renewed from time to time. For some of the porters employed on the difficult mountain seeking to minimise the "disutility" of their task would offer their services to travellers on the easy mountain at a rate somewhat less than the temporarily prevailing one. Nor would equilibrium be reached until each porter employed on the difficult mountain received an excess above the fee for the ascent of the easy one sufficient to compensate him for the extra toil. At the same time—simultaneously in a mathematical sense—the increment of satisfaction due to the "last" porter taken on by each traveller (*loc. cit.*) would just compensate the purchaser of that labour for his outlay on it.

In such a case disutility is an ultimate standard of value according to my definition, since (1) the disutility incurred by the workers is varied (2) up to a point of equilibrium at which value corresponds to effort and sacrifice. (ECONOMIC JOURNAL, Vol. IV. p. 519, par. 3).

Professor Böhm-Bawerk suspects that I am not true to my own definition (above, p. 60), because in referring to this case in my first memorandum (ECONOMIC JOURNAL, p. 520, par. 4) I adduce only the *first* attribute of the definition. But surely it was allowable to take for granted the second attribute implying the classical proportion that the remuneration of occupations varies according to " the agreeableness or disagreeableness of the employments themselves, the easiness and cheapness, or the difficulty and expense of learning them," etc. As it happens, however, I have expressly stated in a note to the sentence on which Professor Böhm-Bawerk bases his criticism (p. 724, par. 1, p. 520, note 2) that *both* attributes must be present. I may have been unhappy in my choice of a definition, but I have not been unfaithful to the one which I have chosen.

Principles of Economics. Third Edition. By ALFRED MARSHALL. (London: Macmillan & Co. 1895.)

" THANK God it's black "—a puritanical old dame is reported to have ejaculated, as the new clergyman ascended the pulpit in a Geneva gown, regarded by a certain sect as more suitable than the surplice for a preacher. A similar feeling of relief and satisfaction may be experienced by another sort of susceptible *doctrinaire*, when the *doyen* of English economists appears in a literary garb which can excite no suspicion of his being tainted with a form of error much condemned by those who have no mind to it—the inordinate use of reasoning. Professor Marshall has rewritten two chapters of his first book " in order to make clear how closely the economist adheres in substance to the methods of inference and judgment of ordinary life " (preface to third edition). He multiplies analogies drawn from the physical sciences in order to show the inadequacy of mere reasoning—instancing now the naval engineer who cannot explain why a fish moves more easily than a torpedo, now the chemist who cannot predict before trial what will be the effect of his drugs on living bodies. It is conceded that much economic work " has less need of elaborate analytical methods than of a shrewd mother-wit, of a sound sense of proportion, and of a large experience of life " (p. 102).

Mathematics are useful—or at any rate they are used "in a treatise such as the present" . . . "only to express in terse and more precise language those methods of analysis and reasoning which ordinary people adopt more or less consciously, in the affairs of everyday life" (p. 804).

The hope that "at last the time has come for the cessation of barren controversy," will be echoed by moderate men of different shades of methodology—especially those who think that in this matter there was little room for improvement on Professor Marshall's earlier editions, perhaps not much room for improvement upon Mill's *Unsettled Questions* and *Logic*.

As it appears to us, the advance which Professor Marshall makes upon Mill's teaching with respect to method is not so much in insisting that the chains of economic reasoning are comparatively short and weak, and require the collateral support of specific observation, but in indicating the nature of the first principles from which the deductive reasoning depends. Mill, in his first version of the logic of political economy, consistently grounded the fundamental premise on the principle of self-interest, the prevalence of the desire of wealth and the love of ease (*Unsettled Questions*, Essay V.). But it is not quite clear what, in his view, would become of the logical structure if, as he came to believe at a later period, a great part of human actions was prompted by altruistic motives. Professor Marshall makes the matter clearer when he explains that the motives dealt with by the economist need not be self-interested; it is required only that they should be regular and measurable. *Money* figures so largely in economic science, not because it is the principal end of human action, but because it is the one convenient mode of measuring human motive on a large scale.

"It would perhaps be possible even now to predict with tolerable clearness the subscriptions that a population of a hundred thousand Englishmen of average wealth will give to support hospitals and chapels and missions; and in so far as this can be done, there is a basis for an economic discussion of supply and demand with reference to the services of hospital nurses, missionaries, and other religious ministers."

"The expense which an Englishman with £500 a year will incur for the education of his children can be told pretty well beforehand. But . . . no good guess could be made of how much he would give to support a destitute second cousin."

The last passage occurs only in the earlier editions. The omission of this sprightly sentence is one of the few instances

of that loss of vivacity which is to be apprehended in revised editions. The interruption caused by additional footnotes is another instance.

The Art of Measurement is extended by the modern economist to subjective feelings.

"If the desire to secure either of two pleasures will induce people in similar circumstances each to do just an hour's extra work, or will induce men in the same rank of life and with the same means each to pay a shilling for it, then we say that those pleasures are equal for our purpose." (Book I. ch. v. § 3).

"If there are a thousand persons living in Sheffield, and another thousand in Leeds, each with about £100 a year, and a tax of £1 is levied on all of them, we may be sure that the loss of pleasure or other injury which the tax will cause in Sheffield is of about equal importance with that which it will cause in Leeds." (Book I. ch. v. § 4.)

"If we know . . . that a bank failure has taken £200,000 from the people of Leeds, and £100,000 from those of Sheffield, we may fairly assume that the suffering caused in Leeds has been about twice as great as in Sheffield" (*ibid.*).

The arithmetical precision of the last passage is not paralleled, so far as we remember, in the former editions. However, in other respects the author has expressed himself on this subject with greater caution. He protests against confounding the economic measurement of utility with the adoption of the ethical standard of utilitarianism. To pass from the former to the latter there would be required, as we interpret, an ethical major premise of the form: To procure the greatest possible sum of satisfaction for all is right, or reasonable, or the *summum bonum* or *faciendum*—we will not here dispute about the predicate. There is certainly no logical connection between this principle and the economic art of measurement; and yet, as it seems to us, there is more than a verbal alliance. For the proposition has been controverted in two ways. It is denied by intuitivist moralists in general that the proposition is true, that the predicate is predicable of the subject. It is further asserted by a certain class of metaphysicians that the subject is unmeaning. Now the first of these contentions remains untouched; but not so the second. When the great economist weighs the suffering of people in Leeds against the suffering of people in Sheffield (*loc. cit.*), when he treats the pleasure of a physical gratification and that of doing a kindly act as equatable (p. 77), when he considers whether governmental interference with the course of

trade may not in certain cases tend to maximum satisfaction (Book V. ch. xii.), he lends the authority of an accredited science to defend at least the possibility of Utilitarian Ethics. It is not indeed demonstrated that the Utilitarian first principle is true, but there is created the conviction that it is not nonsense.

In connection with the measurement of utility it may be mentioned that the doctrine of *consumers' rent* has been retouched in the third book. The nature of the assumptions which it makes is stated more explicitly. The substitution of *tea* for *coals* in the main example is no doubt an improvement.

In the same book there should be noticed an addition to the section which treats of *discounting* future benefits.

In the fourth book one of the principal changes in expression is the more explicit definition of the disutility of labour.

"The discommodity of labour may arise from bodily or mental fatigue, or from its being carried on in unhealthy surroundings, or with unwelcome associates, or from its occupying time that is wanted for pastime, or for social or intellectual pursuits" (p. 216).

It will be found that this definition cuts the knot of some puzzling controversies which turn upon a narrower interpretation of disutility.

The most important change which has been made in the volume consists of the survey of the problem of distribution and exchange which occupies the first two chapters of Book VI. At the outset—preliminary to the "preliminary survey"—there is entertained the very abstract conception of an imaginary world in which every one owns the capital that aids him in his labour, every one is equally willing and able to work, all trades are equally agreeable and easy to be learnt. The truth that the value of everything corresponds to the amount of labour spent on it, the effect on value of a change in the amount of labour—*e.g.*, a new invention doubling the efficiency of work in any trade—are contemplated clearly in this abstract world; just as the study of the action of the tides is simplified by considering a boundless ocean away from the familiar shores and headlands which disturb the tendency to equilibrium. One returns from this excursus with an added security against errors which beset the theory of exchange and distribution. There is no room left for that exaggeration of the part played by marginal utility which has been wittily termed the dog-and-tail fallacy—as if it was the tail which wagged the dog! The "marginal shepherd" is seen not to embody the whole theory of wages.

"The price which it is just worth while for the farmer to pay for this labour merely gauges the outcome of multitudinous causes which between them govern the wages of shepherds; as the movements of a safety valve may gauge the outcome of the multitudinous causes that govern the pressure in a boiler."

And much more to the same effect in the context. (Book VI. ch. i. § 8.)

Another misconception which has been for ever dispersed relates to the response which the supply of labour makes to the demand for it. Exception has been reasonably taken to the terms in which some economists have expressed the analogy between wages and the price of commodities, *e.g.*, the Ricardian "hats," as if the motives governing supply were exactly similar in both cases. But no exception can be taken to the following guarded statement.

"If the state of knowledge and of social and domestic habits be given; then the vigour of the people as a whole, if not their numbers, and both the numbers and vigour of any trade in particular, may be said to have a supply price in this sense, that there is a certain level of the demand price which will keep them stationary; that a higher price would cause them to increase, and that a lower price would cause them to decrease." (Book VI. ch. ii. § 3).

Land differs from the other factors of distribution in not responding in any way by an increased supply to an increase of demand. Our author makes it additionally clear that this is the essential attribute of land; it does not differ from the other factors so much as seemed to some to have been implied by the doctrine that "Rent does not enter into cost of production." Professor Marshall fully admits the facts on which the more intelligent objections to that form of expression have been based.

"Land is but a particular form of capital from the point of view of the individual manufacturer. And the same is substantially true of the individual cultivator. The question whether he has carried his cultivation of a particular piece of land as far as he profitably can, and whether he should try to force more from it or to take in another piece of land, is of the same kind as the question whether he should buy a new plough or try to get a little more work out of his present stock of ploughs. . . . He, like the manufacturer, weighs the net product of a little more land against the other uses to which he could put the capital sum that he would have to expend in order to obtain it." (Book VI. ch. ii. § 5.)

After this explicit explanation it becomes a mere question of words whether we ought to retain the old formula "Rent does not enter into cost of production." Professor Marshall retains it.

He is less conservative with respect to the definitions of capital. Breaking with classical tradition, he now defines social capital as "wealth which yields income in forms that are admitted in the broader use of the term in the market place." (Preface to third ed.; Book II. ch. iv.) With respect to capital there should be noticed some remarks on the benefits which wage-earners derive from the increase of wealth not owned by them and not in the form of trade capital. (Book VI. ch. ii. § 10.)

But it would be impossible here to discuss in detail all the passages which have been altered in the third edition. It must suffice to say of them that generally, while some relate to new events (*e.g.*, more recent vital statistics), and some to new publications (*e.g.*, Mr. Cannan's book), the majority are new only in expression, altered only in order to be made more explicit.

The author, unlike so many of that irritable genus, instead of deriding those who have misinterpreted him, instead of standing out for every jot and tittle which he had written, has complacently altered expressions which experience had proved to be liable to misconstruction. Like the artist in the well-known story, he has silently listened to and profited by the remarks of experts about details; but meeker than the ancient master, he has refrained from breaking out against the criticisms which have been *supra crepidam.*

Money and its Relation to Prices. By L. L. PRICE. (London: Swan Sonnenschein. 1896. 200 pp.)

THE attribute "broad" which Mr. Price himself has claimed for many of his conclusions appears to be particularly well deserved. Summing up impartially almost all the arguments which have been advanced on one side or the other of each issue, he enounces well-balanced judgments to which a general assent will probably be given by most candid readers.

In the lucid order which he has adopted the measurement of changes in prices comes first. The practical validity, the common sense, of the method of index-numbers has never been better stated. In this matter, as in so many others, the economist "is compelled to be content with a balancing of probabilities." The theory of probabilities gives no countenance to an argument

which is sometimes used by monometallists that "if a change of prices be due to an expansion or contraction of the supplies of money the rise or fall must be universal" and uniform. Partisans on the other side will do well to attend to Mr. Price's teaching that in order to prove the operation of such a cause "the commodities on which the index-number is based must be independent."

Considering next the economic effects of changes in prices, Mr. Price, after reviewing almost all the relevant considerations, decides that "they appear to converge to the broad conclusion that the balance of general advantages lies on the side of rising rather than of falling prices." In the proof of this conclusion he lays much stress on the effect which a fall of prices is apt to produce on the "imagination" of entrepreneurs. Might he not have attributed some counteracting influence to the sagacity of business men, whose anticipation of a further fall in prices is apt to act upon the loan market in such wise as to lower the rate of interest and *pro tanto* proportion the burden of future debt to the shoulders which have to bear it? This is a consideration which has been powerfully urged by Professor J. B. Clark in a recent number of the *Political Science Quarterly.*

The changes in the quantity of money and the corresponding vicissitudes in prices are traced by Mr. Price through four great historic periods. As to the rise of prices in the sixteenth century what Adam Smith says is broadly true: "It is accounted for . . . in the same manner by everybody; and there never has been any dispute either about the fact or the cause of it." The consensus is not indeed absolutely complete, as Mr. Price reminds us. If we may accept the statistics of Jacob and Soetbeer, it is certainly remarkable that while the production of silver in comparison with that of gold both in respect of volume and total value should have varied by enormous fluctuations, the value of silver relatively to gold should only have altered from the proportion 1 : 10·45 to the proportion 1 : 15·63.

The fall of prices after 1810 forms the next topic. Winding his way skilfully through the mazes of controversy which perplex the monetary history of the beginning of the century into the clearer light of index-numbers, Mr. Price concludes:—

"In view of the evidence supplied by the index-numbers, in conjunction with the notorious revolutionary disturbances in America and a known diminution of the supplies of the precious metals, amounting between 1810 and 1840 to some 40 per cent., it is impossible to resist the conclusion that the cause was adequate

to produce an effect on prices, that the effect was produced, and there must have been a connection between the cause and the effect."

In the course of the argument he mentions the opinion that "man's efforts to win wealth from bounteous or reluctant nature are with the lapse of time rewarded with more success in the case of the mass of commodities than in that of the precious metals." But his own opinion appears to be that which is expressed on an earlier page: "In the past history of metallic mining, chance, rather than any regular law which can be ascertained, appears to have exercised predominant influence; and recent metallurgical progress renders all prediction doubtful" (p. 66).

Dealing with the rise of prices after 1850, Mr. Price does not fail to point to the "ostensive instance" of the success of bimetallism which is afforded by the stability of the ratio of exchange between gold and silver in spite of the enormous fluctuations in relative production which have occurred in the course of the century. In dealing with this period the author has to consider the relation of credit to prices. He judiciously balances the power of credit to intensify the action of a given addition of metallic money on the level of prices, and the counteracting influence which credit exercises by facilitating extensions of commerce (p. 155, *cp.* p. 49). And apart from such extension of the volume of business it should seem that credit by taking the place of hard money can mitigate a fall of prices (p. 187).

The fall of prices after 1873 forms the last topic. After balancing probabilities Mr. Price thus sums up:—

"In the light of these converging lines of evidence it seems impossible to doubt the existence of a causal connection between the recent fall of prices and the monetary changes of the last twenty years."

One may assent to this proposition as probable, without agreeing that "the degree of probability is so high as to amount to practical certainty." Indeed Mr. Price may seem to have over-estimated part of the evidence: namely, that which is afforded by considering the relation between money and goods "dynamically" in Mr. Giffen's phrase (Price, p. 177). A matter which Mr. Price does not make quite clear may be expected to present great difficulties; and it will be worth while to discuss it at some length.

Mr. Price's argument is as follows:—

"The movement of improvements in production sets steadily

in one direction, while the movement of prices inclines first upwards and then downwards, and then up, and then down again. The only ground on which these opposite changes could be attributed to one and the same cause, that of improvement in production, would be a reversal of this movement of improvement during the periods when the direction of the curve was changed. The argument that the movement of improvement in production proceeded at an accelerated speed during the periods of falling and at a slackened rate in those of rising prices is insufficient, for a positive reversal, and not a mere variation in relative rapidity of the movement of prices, is the fact to be explained. It may be allowed that part of the fall since 1873 is due to improvements in production. It may even be admitted—although the evidence seems by no means conclusive—that these improvements have proceeded with accelerated speed. But when ample recognition has been given to these considerations the phenomena of prices are not explained. Some other cause must still be sought" (p. 178).

Upon this argument it may be remarked that, if the level of prices is regarded as directly proportional to the quantity of money and inversely proportional to the quantity of goods, an acceleration in the growth of the latter quantity is quite sufficient to account for a change in the level of prices. This will become evident if the ratio between the two growing quantities is compared to the distance between two moving bodies. Achilles pursues Hector, presumably with a constant velocity, since we are told that "neither the one can overtake nor the other fly away." If the distance between the heroes is diminished, why should not this be entirely attributable to the acceleration of the pursuer, without any variation in the steady motion of the fugitive? The issue is no doubt very fine; and it would not have been easy for the spectators, even if they could have been brought to understand the question, to determine by observation the answer. Homer decides the matter by introducing the agency of Pallas Athene. Hardly less mythological hypotheses appear to be resorted to by some of those who have treated of the race between goods and gold. Of this kind is perhaps the alleged stimulus to the growth of production in recent years. Since the evidence of such acceleration is, as Mr. Price says, "far from conclusive," while the monetary disturbance is conspicuous, it is reasonable to regard the latter as the cause. The preceding illustration, however, may suggest that the matter is not so self-evident as the author represents; and it must be remembered

that the illustration has been artificially simplified and that there intervene between the cause and the effect a great many agencies, such as the number of purchases effected by each piece of money, the number of sales undergone by each piece of goods, and other circumstances about the variations of which we are absolutely ignorant.

The improvement in production during recent years has a certain bearing on the consequences as well as on the cause of the fall of prices. If the quantity of goods *per head of population*—whatever may be the case *per piece of money*—has increased, then it may be expected that *pro tanto* the average entrepreneur from the increase of his turnover will be favourably affected both in pocket and "imagination." Elsewhere, when Mr. Price is contending that a rise of prices is on the whole advantageous, he argues that even those who suffer from their receipts—such as customary fees—being fixed derive some compensating advantage from the increase of business which may be expected to attend a rise of prices (p. 63). Ought he not consistently to admit that in the recent fall of prices even those who suffer from their disbursements—such as long-standing debts—being fixed derive on an average some compensating advantage from the increase of business which has, as a matter of fact, been simultaneous with the recent fall of prices? [1]

The advisability of the practical conclusion to which Mr. Price points depends largely upon another probability which it does not lie within his present province to evaluate, though he adverts to it with his usual comprehensiveness: namely, the possibility of "forming or maintaining in the future a union of nations sufficiently strong to counteract by the demand for coinage at their mints such changes in supply as are likely or conceivable."

Strikes and Social Problems. By Professor J. SHIELD NICHOLSON. (London: Adam and Charles Black, 1896. Pp. 236.)

"THE reaction in favour of the classical political economy," the title of one of the essays here collected, might be applied to the whole collection. There had been, the author tells us, a reaction against certain principles of political economy. "Exceptions were multiplied to such an extent that many people began to think the principles had vanished. This reaction or conversion has now attained such a pitch that the converted seem to think

[1] *Cp.* ECONOMIC JOURNAL, Vol. V. p. 440.

that individual freedom is certain to be productive of evil results, and that all virtue is to be found in collectivism." Against this exaggeration Professor Nicholson urges "a plea for industrial liberty," not only in the essay thus entitled, but throughout the volume.

He dwells first upon the cost of strikes. Referring to the great coal strike for "a living wage" he points out that, "even if wages are not reduced for eighteen months" (written in 1893), by the end of that time the miners will have earned just the same as if they had continued at work all the time at the reduced rate. The gain in idleness would not compensate the privations of the strike. "What miner would have parted with 7*s.* 6*d.* in the strike to be paid 7*s.* 6*d.* after a year and a half? The 7*s.* 6*d.* during the strike might give his children food for a week, but the same sum on the top of 34*s.* 6*d.* would only bring extra comforts and not indispensable necessaries." (The author felicitously applies the principle of final utility of which in a later essay he has spoken somewhat disparagingly.) Unions have not increased the total wealth of the country. "It is even very doubtful if on the whole in recent years they have increased wages at the expense of profits." "The general result of universal combinations of labour will be to lessen on the whole the national production and thereby the national consumption."

In the essay on *Profit-Sharing*, Professor Nicholson maintains the essence of the older teaching—namely, "that the work done will vary according to the interest of the worker in the result." He lops off some excrescences which the cultivators of profit-sharing have attempted to graft on the general principle: in particular the error of supposing that profit-sharing can be a substitute for trade-unionism.

In another essay *the reality of industrial progress* is shown. The progress of Society has not consisted in making the rich richer and the poor poorer.

"There were in 1891 in the United Kingdom upwards of 33,000,000 of sheep, 11,000,000 of cattle, and 4,000,000 of pigs. Besides this there were imported enormous quantities of live stock and meat of various kinds. Now I think it would be a very interesting sum to work out: 'If all this meat is consumed by a few bloated aristocrats and plutocrats, what must be the average size of their stomachs?' The answer would come out in hundreds of thousands of cubic feet."

A similar reflection (p. 228) and other optimistic conclusions are suggested by the essay on the relative strength of capital

and labour. These lessons are not closely bound up with the author's peculiar views on living capital which are now reprinted from the ECONOMIC JOURNAL (Vol. I. p. 95). It is possible to accept the practical lessons while holding with J. S. Mill that "in propriety of classification the people of a country are not to be counted in its wealth"; with Professor Marshall that "it seems doubtful whether an estimate of the capital value of the population as a whole can serve any useful purpose."

The reaction in favour of the classical political economy as conducted by Professor Nicholson resembles the original movement as started by Adam Smith in deriving considerable support from the power of felicitous expression. It is impossible within narrow limits to fully justify this comparison; copious extracts would be required in order to convey an adequate impression of the sustained brilliancy of Professor Nicholson's style.

It is a more doubtful compliment to ascribe a certain Ricardian trenchancy to our author's logic. Ricardo, as he himself tells us, "imagined strong cases"; and, as Professor Marshall adds, he "purposely omitted many things which were necessary for the completeness of his argument." A similar concentration may be attributed to Professor Nicholson. Thus, when arguing in favour of competition he maintains: "the first result of the principle of competition applied to wages is that for equal efficiency there shall be equal wages, and no scheme of Socialism founded upon reward according to deserts ever arrived at more perfect equality." The equalising influence of the market is thus felicitously illustrated:

"A duke might be willing to pay a cook five thousand a year rather than do his own cooking, and a cook might be willing to accept his keep as wages rather than do his own starving, but the actual market price of a cook will be between the two extremes. And the reason is that, under competition, all the cooks (making allowances of course, by a kind of multiplication table, for differences in quality) for work of the same kind 'must have the same wages'" (p. 31).

But might not the Socialist reply thus? As the dukes, the captains of industry, are comparatively few, as, in Professor Marshall's words, "a man who employs a thousand others is in himself an absolutely rigid combination to the extent of one thousand units in the labour market," the market price of the work may well be nearer the starving point than to the other extreme. And our complaint is against the unequal treatment of the cooks

and dukes. That the cooks fare equally well or badly as compared with each other is a poor consolation.

Professor Nicholson's rejoinder, we may conjecture, would be as follows: The portion of the "dukes" is small; the greater part of the wealth annually produced in the United Kingdom is consumed by the working classes (pp. 89, 128). The higher remuneration of the higher ability is just; "intellects of this sort . . . deserve this scarcity value" (p. 132).

Some exception may also be taken to the following argument against combination:—

"Suppose then that the minimum wage demanded is above the competition rate. What will be the result? The inevitable result will be, that there will be a lessened demand for labour. Works that only just paid at the lower rate must be shut up, if the price of the commodity remains the same; and if the price of the article rises, that of itself will check the demand of consumers, and in turn will limit production. If this were not the case, if mere insistence on a certain rate were sufficient to secure it, if nothing but obstinacy and endurance for a few months were necessary, what is to fix the minimum? why should it not be raised to five pounds or fifty pounds a week?"

But might not the dispositions of the capitalist and employing classes be such that, the price of labour being raised, the offer of other agents of production will not fall off so very much, but that the workmen's portion will be increased, while the total produce is a little, and the shares of the other parties are very much diminished. The *reductio ad absurdum* is not convincing; it might equally be objected that a government could not benefit itself by imposing or increasing a tax, because, if the tax were indefinitely increased, the proceeds of the tax together with the industry of the country would come to nothing. It is intelligible that there should be a certain maximum point up to which, but not beyond which, pressure can be exerted with advantage.

This on the preliminary supposition that the problem of distribution is treated only statically. The dynamical problem involves an incident which, as Professor Marshall says, was not sufficiently attended to by Ricardo, "the increase in the productiveness of labour that results directly from an improvement in the labourers' condition." Professor Marshall speaks of the fact that highly paid labour is generally efficient as "more full of hope for the future of the human race than any other that is known to us."

These considerations cannot have escaped Professor Nicholson,

though he may seem not to have attached much importance to them. The practical conclusion is, as he intimates (p. 39), in a sort of mean between competition and combination. The determination of such a mean by a balance of counteracting considerations is an act of judgment which does not admit of being reduced to exact rule. It is an estimate which may be bettered by comparison with other estimates. Those who are not so committed to their own opinion as to think it incapable of correction will consider with great attention and deference the judgment of such an authority as Professor Nicholson.

The calibre of his intellect, the capacity of seeing the general in the particular—and illuminating both with the brightness of style—is further exemplified in the description of *A Voyage Round Africa*. What a vivid impression of what has been called the real cost of labour is given by the following description of the work of firemen in a steamer on the Red Sea :—

"You can form some idea—intellectually—of the condition under which the firemen and engineers work when I tell you that the temperature recorded at the time of my visit was 136°; but mere figures fail to express the effect on the feelings and on the vital strength. . . . And besides the heat there is the unceasing clamour of the machinery, and the perplexing rush of wheels; there is the pitching and rolling of the vessel; everything that is touched is steeped in grease and coal-dust, and the stifling air is hardly penetrated by the feeble glow of the lamps; and in a word every one of the senses—touch, sight, smell, hearing, the very taste—is offended, jarred upon, and nauseated."

All will agree with Professor Nicholson, in thinking it strange "that with all the progress of mechanical science, the only way of getting coal into a furnace is by pitching it in with a shovel." To some it may also appear strange that with all the progress of social reform, the hardest work should not be adequately paid.

A plea for the abolition of slavery in Zanzibar aptly concludes a volume which breathes throughout the spirit of liberty.

Leerboek der Staathuishoudkunde. Door N. G. PIERSON. Eerste Decl. Tweede herziene druk. (Haarlem: E. F. Bohn. 1896. Pp. 671.)

THIS is the first part of the second edition of the great treatise in virtue of which Mr. Pierson may be regarded as the *doyen* of Dutch economists. Among the considerable additions to the work which have been made is an introduction relating to the

scope and method of political economy. The distinction which is drawn by some German writers between theoretical economics and economic policy does not commend itself to Mr. Pierson. That no such sharp line can be drawn is taught with authority by one who has applied as finance-minister the science which he had contemplated as professor. Adam Smith's description of the subject in the opening sentences of the *Wealth of Nations* is complained of as too simple, leaving out of view the essential characteristic of exchange. It is as if we had to do with a communistic society. Upon the nature of economic laws our author takes an equally distinctive, not to say a polemical position. "Marshall's definition of economic laws is just, but imperfect." Rogers' disparagement of the search for tendencies was mistaken. This topic leads on to the method of political economy. It is refreshing to find in these days a first-rate economist who has the courage to say that deduction is the only effective method. Mr. Pierson's view about the rival method, "the so-called induction," appears to us to be much the same as that which Professor Marshall has expressed in his Inaugural Address. Mr. Pierson, however, expresses disagreement from Professor Marshall, because the latter in his *Principles of Economics* holds that *all* the devices for the discovery of the relations between cause and effect, which are described in treatises on scientific method, have to be used in their turn by the economist.

Mr. Pierson gives a favourable specimen of his deductive method in his reasoning concerning the effect on house-rent of a change in the cost of building, or of a new tax. With a precision that has not characterised former writers on this subject, he distinguishes four cases:—(1) where owing to the abundance of building-land there is no ground-rent or only an insignificant one; (2) in localities deserted by fashion where the existing houses fetch a rent less than that which should normally correspond to the cost of building; (3) where there is a rentless margin at the outskirts of a city, with an interior area within which ground-rents form a considerable portion of the house-rent—larger and larger as we approach the centre; (4) where there is no available building-land—no rentless margin—owing to surrounding walls or water, or conditions like those which isolate the City of London. Suppose now the cost of building to be altered. Case 1 follows the ordinary law of manufactured commodities. In cases 3 and 4, the change in the cost of building is without influence on the house-rent. The third is the most general and difficult case. At the margin—supposing that with the increase of population

there is a demand for new houses—the rent paid by the occupier will be raised to the full extent of the increase of the cost of production, so as to afford the builder ordinary profits. The increased price of house accommodation at the circumference will increase the competition for houses in the interior and send rents up to a point such that the excess of the rent paid by the occupier in the more favoured localities over that which is paid at the margin should be about the same as—or, Mr. Pierson has reason for thinking, rather less than—before. The effect of a tax on house-rent is governed by the same principle.

Among other additions to the second edition are some passages in the chapter on (agricultural) rent, recognising Professor Marshall's explanation of the effect of improvements on rent. In the chapter on the interest of Capital Mr. Pierson adopts Dr. Böhm-Bawerk's views as to the demand for future goods. The chapter on wages has also been enlarged so as to discuss practical problems more fully.

The second part, on money, banking, foreign exchange, has not been altered much. It has, however, been brought up to date. Thus with regard to the alleviation of debtors by the depreciation of currency, reference is made to Mr. L. L. Price's quite recent book on Money. Many of the most cherished doctrines of the Bimetallists do not find favour with Mr. Pierson. Thus he sets small store by the argument that the depreciation of the currency of a country—whether silver or paper—with respect to gold acts as a bounty on exportation to gold-using countries. He denies that steadiness in the purchasing power of money is in all cases desirable. Thus in the case of a general rise in the productive power of labour, it is best, he thinks, that prices of commodities should fall, the price of labour remain constant. That prices have fallen in recent years Mr. Pierson admits on the evidence of index numbers. He admits that index numbers may ascertain the *fact*, but doubts whether they can measure the *extent* of a change in the value of money. Considering the enormous "error" to which these measurements are confessedly liable, this scepticism can hardly be judged immoderate. And yet in the case of other obscure perceptions, where nice degrees of quantity are not cognisable—for example, in comparing the ability of two persons, or the pleasurableness of two courses—if we are competent to perceive the fact of a difference, we are also competent to roughly estimate the extent of the difference, to affirm that it is considerable or trifling.

But an adequate discussion of statements so authoritative as

Mr. Pierson's must be postponed. It has been attempted here merely to indicate the principal additions which have been made to the second edition of this standard work. A fuller consideration might be more appropriate when the English reader can be referred to chapter and verse in a translation; which we earnestly hope will soon be forthcoming.

Istituzioni di Scienza delle Finanze. AUGUSTO GRAZIANI. (Torino: Bocca. 1897. Pp. 715.)

THE scope of this work is theoretical. The description of actually existing taxes is introduced in order to illustrate the general principles of taxation. This combination of the concrete with the abstract is very happy. Especially with respect to the finances of Italy, the reader obtains much valuable information, enhanced by being, as it were, set in a frame of theory.

The author is conversant not only with the theory and the facts, but also with the literature of finance. Both in the chapter devoted to the history of the science and throughout the work are to be found instructive references to writers whose names will be new to most readers. Particularly serviceable are his lucid statements of the views held by Dutch and German economists, and all whose language or style may render them inaccessible to the general reader.

To learning Professor Graziani adds logical acumen. He possesses in a high degree the quality which a great Austrian economist has called in a good sense "casuistry." For instance, the new remarks (p. 45) on the old question whether services can be accounted as wealth claim attention. In the spirit of the Germans our author distinguishes between a tax and an impost (p. 245).

"While the tax corresponds to a special service received from the State, the impost is a contribution for the general assemblage (*raggiungimento*) of public objects, and is not referred to any individual service conferred by the community (*consorzio colletivo*) on him who pays the impost."

Possibly, as Leon Say has remarked, all these logical distinctions never brought a penny into the Exchequer. Yet they serve to cultivate a dialectical power which is adapted to the subject. What confident assertions we have lately heard on one side or the other of the question whether money spent by Government on and in Ireland should be set off against her

imperial contribution! It requires a little philosophy to perceive that such questions are not so simple as they look.

The most important ἀπορία in the philosophy of taxation relates to the proper distribution of the burden. Our author has brought all his powers to bear on this fundamental question. He criticises his predecessors with great force. Thus, with respect to the principle posited by Cohen-Stuart and other Dutch writers, that the proportion between the utility which one forgoes by having to pay taxes and the total utility obtained from one's income should be the same for all the tax-payers, Professor Graziani pertinently asks: Why postulate this proportionality, and not the equality of sacrifice? His own principle somewhat resembles that of equal sacrifice; in fact, we have not seized the points of difference which he has indicated (p. 305). He thus states his first principle (p. 52):

"The distribution of public burdens should be effected in such wise that each one obtains the greatest possible relative utility, and that the value of the wealth subtracted by the tax should be the same for each one" (p. 52).

"Relative utility," it should be explained, means much the same as, in Professor Marshall's phrase, "consumers' rent" (p. 50).

As we understand, Professor Graziani accepts the analogy between the sacrifice which the taxpayer incurs for the sake of public objects, and the sacrifice which the ordinary purchaser incurs for his private ends. He thus resumes his doctrine (p. 301):

"We know that the tax tends to take away from each and all that quantity of wealth which they would each have voluntarily yielded to the State for the satisfaction of their purely collective wants, and that this quantity . . . should represent for all the same total utility, so as to secure to each the greatest relative utility."

The further explanation of the author's meaning would probably repay a sympathetic critic. We have been discouraged by the preconception, that in order to judge of such a relation as that between maximum utility and equality some mathematical precision is required. But this is the one quality which may seem to be deficient in our author's otherwise complete equipment.

It is interesting to inquire in the case of so considerable an economist how far this deficiency is serious. Accordingly we shall examine in some detail our author's treatment of that part

of the subject which most admits of pure reasoning, namely, the shifting of taxation. In the case of monopoly we have the following argument (p. 335) :—

"Let it be supposed that at the price of 5 [francs] per piece a monopolist can sell 1,000 units of his product, that each of these is attended with a cost of production of 2 francs, and that accordingly he obtains a gross return of $5 \times 1{,}000 = 5{,}000$ francs, and a net return of $(5 - 2) \times 1{,}000$ francs $= 3{,}000$ francs. Let it be further admitted that any other price, greater or less, than 5 gives a net return below 3,000 francs; it is certain that he will adopt the price of 5 per piece. Such being the circumstances, the State imposes a tax of 1 franc per piece; then the net return per piece is reduced to $5 - 3 = 2$, and the net total return is reduced from 3,000 to 2,000 francs. Now, if at the price of 6 per piece the consumption of the product falls to 700, as the cost per piece is 3, the net return is equal to $700 \times (6 - 3) = 2{,}100$. Granted that this is the highest net return that the new conditions admit, the monopolist will abandon the price 5, which enables him to obtain a net profit of 2,000 francs, to adopt the price 6, which enables him to obtain a clear profit of 2,100. Contrariwise, if the tax were $\frac{1}{4}$ franc, the cost per piece would increase from 2 to $2\frac{1}{4}$; the net profit resulting from the price 5 descends from 3,000 to $(5 - 2\frac{1}{4}) \times 1{,}000 = 2\frac{3}{4} \times 1{,}000 = 2{,}750$, while the clear profit [*lucro reale*] resulting from the price 6 would be $(6 - 2\frac{1}{4}) \times 700 = 3\frac{3}{4} \times 700 = 2{,}625$," and *admitting that the other prices yield profits likewise inferior*, the price 5 would be maintained."

The admission which we have italicised being made, the consequence alleged by the author would of course follow. But the admission is inadmissible under the circumstances. For if, when the cost per piece is 2, there is a maximum of profit at the price of 5, then, when the cost per piece is raised to $2\frac{1}{4}$, the price which yields maximum profit becomes greater than 5.[1] That this other price yields profits inferior to what 5 (after the imposition of the tax) does is in general inadmissible.

Professor Graziani proceeds (p. 355) :—

"The monopolist can never shift the tax *in toto ;* but he succeeds in shifting it in part and diminishing its burden."

The question here arises, How is the extent of shifting to be measured? The answer which the author would give is, pre-

[1] See this point proved formally and mathematically by Cournot in his *Principes Mathématiques*, Art. 31; informally and in plain prose by the present writer in a recent number of the ECONOMIC JOURNAL (Vol. VII. p. 229).

sumably, by the addition to the price consequent on the tax.[1] This answer seems consistent with his general view, and with those particular passages (pp. 337, 338) in which he impugns Professor Seligman's statements. When asserting the contradictory of those propositions, he implies that he takes the terms in the same sense. Now, Professor Seligman, as I understand, would measure the degree in which the tax is shifted as I have above proposed.[2]

Thus interpreted, the proposition above quoted cannot be accepted. For the price may be raised in consequence of the tax, not merely by a part of the tax, but to the full extent of the tax, and even to an extent greater than the amount of the tax.[3]

Professor Graziani goes on (a few lines further down, page 336) :—

"There may, therefore, be established a partial shifting of the tax, which will be the more probable the greater is the diminution of cost attending the diminution of the gross return." [4]

We are unable to interpret this proposition in any sense which is true. It purports, presumably, that the extent of shifting is greater [or less] according as the rate at which the cost of production decreases with the decrease [or increases with the increase] of the amount produced is greater [or less].[5] But the greater that this rate is, the *less* is the degree of shifting (measured as above). There is a repugnancy where Professor Graziani thinks that there is a parallelism.[6]

[1] The extent of shifting might conceivably be measured by defining that there is more or less shifting according as the loss to the monopolist, consequent upon the tax, is less or greater. But this does not appear to be the definition adopted by the author. It may be worth observing that some, but not all, of the propositions mentioned in the text as false in the primary sense of the term "shifting" would be true in this secondary sense.

[2] See Seligman, *Shifting and Incidence*, p. 161 (referred to by Professor Graziani at his p. 338) : "The degree to which he [the monopolist] will add the tax to the price" . . . and pp. 151, 152 (alluded to at p. 161).

[3] Cournot, *Principes Mathématiques*, Arts. 33 and 38. *Cp.* ECONOMIC JOURNAL, Vol. VII. p. 227.

[4] Può dunque verificarsi una translazione partiale dell' imposta, la quale sarà tanto più probabile, quanto più diminuiranno i costi, rispetto alla diminuzione del prodotto lordo.

[5] *I.e.*, the rate at which Cournot's function $\phi'(D)$ [*loc. cit.*, Art. 29] increases with D.

[6] Designating, with Cournot, the amount produced by D and the expense of production by $\phi(D)$, we have by his reasoning, for δD, the variation in the quantity produced, consequent on the imposition of the tax of u per piece, $\delta D = u \div \left(\frac{d_2}{dD^2}D \times p - \phi''(D)\right)$ where p the price is of course a function of D. *Ceteris paribus* the variation of D decreases with the increase of $\phi''(D)$ (the rate of

Professor Graziani goes on (p. 336) :—

"If the demand approaches conditions of relative stability, a partial shifting [*la ripercussione parziale*] is probable."

If we are to understand by "conditions of relative stability" what Professor Marshall has called "inelasticity," then the proposition asserted appears to be the reverse of the truth. The more that the demand approaches perfect inelasticity,[1] the *less* is the increase of the price, *ceteris paribus*.

Professor Graziani may appear here and elsewhere to have fallen into a confusion not surprising in one who considers "the mathematicians—Cournot and the others—less important." [2] It is assumed that the conditions which favour the elevation of the price before the tax favour also its additional elevation after the tax. But the presumption is the reverse. The more the monopolist exacts before the tax the less he can exact after the tax. To take an extreme case: Suppose the monopolist to be a sole buyer, and those with whom he deals to be under the necessity of selling without a reserved price, the monopolist will exact the worst possible terms from the seller, will buy at nominal price, and accordingly will have to pay the whole tax. Analogously, the inelasticity of demand favours the elevation of the price prior to the tax, but not the shifting of the tax.

Professor Graziani next discusses the incidence of a tax on the gross returns of the monopolist. He says (p. 336) :

"We must distinguish two possible cases. It is well known that the price which is adopted by the monopolist is that which, taken in conjunction with the extent of consumption, procures him the greatest possible net return. Now it may happen that the price which allows him to obtain the maximum net return coincides with that which enables him to attain the maximum gross return; but also it may happen that the price which secures the monopolist the maximum net return is not the same as that

increase which we understand Professor Graziani to designate), it being remembered that the expression in brackets which forms the denominator of δD must be *negative*, as the profits of the monopolist were at a maximum before the tax (*cp.* Cournot, *Principes Mathématiques*, *loc. cit.*). Whence it follows that the greater [or less] the rate designated as $\phi''(D)$ the less [or greater] is the diminution of the amount produced, and therefore (*ceteris paribus*) the less [or greater] the increase of price which is the measure of the degree of shifting.

This reasoning is independent of the sign of ϕ''; and it may therefore be employed to prove that *ceteris paribus* the shifting is greater under the law of increasing returns than under the law of decreasing returns.

[1] The smaller (in absolute magnitude) the $F'(p)$ of Cournot, the less *ceteris paribus* is δp. See Cournot, Art. 31, equation 4, and the corresponding equation in Art. 38; and compare ECONOMIC JOURNAL, Vol. VII. pp. 227–8 note.

[2] ECONOMIC JOURNAL, p. 325 note, *cp.* p. 327 note.

which secures him the maximum gross return.[1] . . . On this last hypothesis shifting is impossible.[2] . . . But if, on the contrary, the maximum net return corresponds to the maximum gross return, it may happen that the monopolist may find it advantageous to alter the price."

The *second* hypothesis is the general case. In this case, according to the well-known analysis of Cournot, shifting will in general occur. It is difficult to understand Prof. Graziani's reasoning to the contrary. It is in virtue of his dictum respecting the *second* hypothesis that we altogether differ from his general conclusion that normally a tax on gross returns cannot be shifted. Surely it is not so normally, but only in particular cases.

One more specimen of the author's method. He argues on the next page (p. 538) that "the more in general that a branch of production is subject to the law of decreasing returns the more probable will shifting be." We submit that the exact reverse of this is true for reasons stated elsewhere.[3]

A similar, doubtless less serious, deficiency of mathematical precision may be suspected in the treatment of other less complicated, though perhaps more important, subjects—the incidence of international tariffs, and, as already suggested, the equity of taxation.

Leerboek der Staathuishoudkunde. Door N. G. PIERSON. Tweede Deel; 1e stuk. Tweede herziene druk. (Haarlem: E. F. Bohn. 1897. Pp. 376.)

THE second volume of Mr. Pierson's revised treatise maintains the high character of the first.[4] His solid sense and weighty learning move steadily along the main lines of economic reasoning like those vast engines which rolling over our material high roads render them more smooth, compact, and serviceable. We cannot follow his course methodically; we must pass hurriedly over large tracts.

[1] The explanation of this phenomenon is thus given in the original: "in quanto la diminuzione delle spese inerente ad una produzione minore, od in taluni casi anche maggiore, cangi il rapporto fra il provento lordo e il netto."

[2] For a reason which is thus given in the original: "perchè l'imposta essendo regolata sul prodotto lordo, che è più grande relativamente al prodotto netto minore, da questo dovrebbe detrarsi maggior somma, che dal prodotto netto maggiore, et perciò il prezzo non verrebbe in alcuna guisa mutato."

[3] ECONOMIC JOURNAL, Vol. VII. p. 237 note; and see Index, s.v. *Monopoly*; Taxation in regime of.

[4] See above, p. 77.

Production being the subject of the third subdivision (*afdeeling*) which forms Mr. Pierson's second volume, he first clears away the misconception of over-production, then makes "the conception of production" clearer by defining the terms goods and income. Under the head of "production and self-interest" are considered depressions, which are seen to be unavoidable; crises, the evils of which can be only palliated by an improved banking system; trade unions, which cannot exercise a great influence in a poor and undeveloped population; social legislation, which is in principle perfectly justified, but is often powerless and always difficult; in fine, socialism, which preaches ideals for which we must cherish the highest sympathy, but has not shown how they are to be realised. The imperfections of a social machinery driven by purely economic motives may partly be corrected by charity. Charity performs a part like that of the weaver in a mill who takes up the broken thread. The State, besides its direct action in the way of poor relief, may do something to excite charity by means of *enquêtes*, which open the eyes and direct the opinion of the public.

The evils which charity palliates would be much less formidable were it not for the danger of the too rapid increase of population. Mr. Pierson truly says: "It is no light task to give a just exposition of Malthus' doctrine." Readers of the ECONOMIC JOURNAL [1] may remember the surprise with which they learnt from Mr. Cannan that the law of diminishing returns was not an essential part of Malthus' original doctrine. We commend Mr. Pierson's version of the theory as a sufficiently accurate summary. He clears away some misconceptions. M. Leroy Beaulieu's polemic against the particular rate of increase, doubling in twenty-five years, assigned by Malthus is shown to be irrelevant, if not erroneous. Mr. Pierson does not subscribe to M. Leroy Beaulieu's description of large families as schools for forming character, while in small families the children are liable to be spoilt by too much care. This argument contains some grains of truth, in so far as it relates to the more favoured classes. But think of the majority of little urchins among the struggling masses. There is no danger of their being unnerved by over care. As to the objection that the struggle for life is a necessary condition of energy, may there not be a struggle for the comforts of life rather than for life itself; such a struggle as we see in the case of the banker, the manufacturer and the shopkeeper? Among the theories which run counter to that of Malthus, a foremost place is occupied by the pre-Malthusian doctrine that increased

[1] Vol. II. p. 53.

population brings increased employment. The principles of Beccaria and J. J. Becker have been revised in a modern form by Professor Cort Van Linden. It is not very creditable to the Socialists, Mr. Pierson justly thinks, that they for the most part pass over the Malthusian theory in silence. Marx is hardly an exception. However, Mr. Pierson thinks him worthy of a serious refutation. To the contention that Malthusianism makes against charity, Mr. Pierson quotes with approbation the words of Malthus himself :

" Supposing it to be allowable that the exercise of our benevolence in acts of charity is not upon the whole really beneficial to the poor, yet we could never sanction any endeavour to extinguish an impulse, the proper gratification of which has so evident a tendency to purify and exalt the human mind " (p. 443, 7th ed.).

Besides, as imprudent marriages spring from want of foresight, the mitigations of consequences—not being foreseen any more than the consequences themselves—would not tend to increase the imprudence. Extreme uncharitableness is like extreme punishments, which long experience has proved a failure.

These and other objections having been met, there comes the question, to what practical conclusion does the Malthusian theory lead ? To none, would be the simple answer, if, as M. Leroy Beaulieu holds, it is a law that the proportional excess of births over deaths tends to decrease among civilised people—the more rapidly the greater their progress and intellectual culture. Mr. Pierson, with that mastery of figures which he ever evinces, marshals statistics against this proposition. The decennial excess of births over deaths—or " natural increase " as our statisticians say—in England during the 18th century was some 6 per cent. on an average, and in no decade greater than 10·3 per cent. ; while since 1801 the decennial increase has been some 14 per cent., and in no decade less than 11·7 per cent. In Holland the natural increase has steadily increased since 1840–9. Comparing countries we find, for the decade 1871–80, the annual natural increase per 10,000 in Great Britain 140, in West Austria, Galicia and Bukowina 75. What a low state of culture there must be in Great Britain as compared with those provinces ! M. Leroy Beaulieu relies on statistics of birth-rate in several countries in the triennium 1874–6 compared with the corresponding figures for the period 1889–92. But if he had begun sooner and ended sooner the results would have been different. For the three decades 1851–60, 1861–70, 1871–80, six of the countries show a continued progress.

M. Leroy Beaulieu's statistics acquire plausibility from the fact that the period 1874–6, which he has selected as one term of his comparison, was a period of particularly high natality in most countries. The more decisive reply is that diminished birth-rate may be attended with still more diminished death-rate. There is, doubtless, this kernel of truth in Leroy Beaulieu's theory that the birth-rate is particularly high among the less favoured classes, as was illustrated by a recent Dutch *enquête* (referred to in the ECONOMIC JOURNAL, Vol. VI. p. 665).

Other more positive prescriptions having been dismissed, there remain over only the "moral restraint" advised by Malthus and the counsels of the Neo-Malthusians. The former alternative, Mr. Pierson thinks, requires too much from human nature. The latter is not to be hastily rejected as immoral; as if over population were not productive of immorality. The end proposed is good; our judgment about the means should be suspended until an impartial verdict of medical experts can be obtained.

The greater the difficulties in the way of accommodating population to production, the stronger the motive to increase production. Of the immense range of topics thus presented, Mr. Pierson selects two for special consideration: protection, and the tenure of land. He reviews and refutes the principal arguments of the Protectionists. This task of slaying the slain has been made necessary by the recent revival of Protectionist fallacies, which is attributed to three causes. There is first the fall of prices which now, as in the period after the Napoleonic war, swells the cry against free trade. Then the faith in *laissez-faire* as part of a "natural order" has declined. Mr. Pierson, as usual in sympathy with the best thought of his age, holds that the unfettered action of self-interest is in many cases injurious to the public welfare, but in still more cases beneficial; so that the burden of proof rests upon those who propose restrictions. [*Cp.* Sidgwick, *Scope and Method of Political Economy.*] A third cause is the advent to power of the working classes who believe in Protection as a means of increasing employment. In his refutation of erroneous theories, Mr. Pierson makes good use of a conception which he introduced in his first volume, the price of labour (*arbeidsprijs*) being, as we understand, the monetary equivalent of what Professor Bastable has called, with reference to international trade, the unit of productive power. Passing over all that is well said about bounties and other aspects of the controversy, we come to the chapter on Land Tenure. Mr. Pierson gives a comprehensive survey of the conditions under which land

has been held in different ages and countries. The latest English researches are incorporated; but the point of view is cosmopolitan. There could not be a better preparation for a discussion of the nationalisation of the land. This cannot be defended, Mr. Pierson holds, as tending to increased production, but only as a means to more equal division of the produce. Mill's arguments on that head may quite possibly become applicable, if there should be a general rise of rents before another century passes. Still, the financial difficulties of the operation would be formidable. Then the salaries of the public stewards or bailiffs who would be required would be burdensome. These expenses might indeed be reduced by leases of the nationalised lands for 100 years. But who would benefit by the arrangement? Our great-grandchildren. But if we want to benefit posterity, there are more certain ways: *e.g.* paying off the National Debt. In these reasonings it is taken for granted that compensation is to be given to the owners who are to be expropriated. Henry George's plan is rejected as one of the most wasteful forms of confiscation.

It will be understood that we are presenting only samples of Mr. Pierson's reasonings. We still cherish the hope that the work in its entirety will be made accessible to the English reader by being translated into some language more generally familiar than the Dutch. There is a quality in the work which is probably demanded by our public more than much of the home-made article. *The Times* no doubt expressed a national sentiment when, reflecting upon Walker's death, their leader writer said that he resembled the older classical economists who kept in touch with practical life and had no idea of making their science a collection of refinements remote from the business of the world.

That combination of the man of affairs and the professional economist which has become uncommon in England is to be found in the Prime Minister of Holland.

PROFESSOR GRAZIANI ON THE MATHEMATICAL THEORY OF MONOPOLY.[1]

ECONOMIC controversy is generally a thankless task. You cannot hope to make any impression on your opponent. Yet he is the only reader on whose interest you can count. However, a

[1] Augusto Graziani, *Sulla ripercussione delle imposte nei casi di monopolio* (*A proposito di alcune osservazioni del prof. Edgeworth*), Torino, Fratelli Bocca, 1898, p. 12. [Referring to a review of Professor Graziani's *Istituzioni* by the present writer in the ECONOMIC JOURNAL, Vol. VII. p. 403. Above, p. 80.]

discussion with Professor Graziani upon the theory of monopoly may form an exception to this general rule. For Professor Graziani has shown in his courteous reply to my criticisms of his *Istituzioni* that he is amenable to argument. He makes one concession,[1] which is one more than most disputants can be induced to make. Also a more than personal interest may attach to the renewed discussion of the points on which Professor Graziani still holds out. They relate to important problems in the science of taxation; and they raise the general question whether the mathematical can be of any assistance in dealing with such problems. Professor Graziani maintains the negative: that "in the matter of repercussion [shifting and incidence of taxation] Cournot and the other purely mathematical writers have not proved any truths which have not been, or could not easily be, demonstrated without the use of mathematical symbols."[2] I accept this challenge and join issue at all the disputed points.

I. Professor Graziani denies what I, after Cournot, have affirmed, that normally and in general a specific tax (a tax of so much per unit supplied) on a monopolised article will (tend to) raise the price of the article. He argues thus: "In order that in every case an elevation of price should be advantageous to the monopolist, it would be necessary to prove that universally the gain resulting from the diminution of the impost would be greater than the loss which the net profit suffers from the change of price. And this demonstration Edgeworth has not given and could not give. He ought to have proved that if, for example, the price 5 gives the largest net profit to the monopolist before the imposition of the tax, there will be found, after the imposition of the tax, a price greater than 5, which will *necessarily* give a profit greater than any other price. And whereas by hypothesis, abstracting from the tax, any higher price causes the monopolist to obtain a profit smaller than 3,000,[3] which we will call $3{,}000 - a$, if the [total] tax charged on the amount produced at the price 5 is called b_1, and the tax on the amount produced at a price greater than 5 is called b, Edgeworth's proposition may be replaced by the formula: $3{,}000 - (a + b) > 3{,}000 - b_1$; which reduces to the following: $a + b < b_1$. . . . If we represent by c the excess of b_1 over b, we may transform the condition above stated into this: $a + b < b + c$, which is fulfilled if $a < c$."

But, continues Professor Graziani, as a depends upon the law of demand, and b partly upon the law of demand and partly on the

[1] *Op. cit.*, p. 10. [2] *Op. cit.* p. 4. [3] Referring to an example given.

amount of the tax per piece, " the law of demand and the rate of taxation may be such that a is either less or equal or greater than c; [1] and it may accordingly be the interest of the monopolist either to raise the price or to maintain the original price."

In this passage Professor Graziani has well stated the problem; but he has not fully utilised one of the data : namely, that the net profit of the monopolist was a *maximum* at the original price. When that circumstance is attended to, the relation of a to c is found not to be so indeterminate as Professor Graziani supposes. When that change of price is small, a, the diminution of the net profit (irrespective of the tax), must be positive ($-a$ must be negative) whether the small change is in the positive or negative direction. Thus if we designate by $\pm \Delta p$ the small quantity added to, or subtracted from, the original price, it may be expected that a will be of the form $+(\Delta p)^2 \times w$, where w is positive.[2] Also b_1 the amount of tax paid at the original price, is of the form $x \times t$, where x is the amount of the commodity supplied, and t the rate of taxation per piece. Accordingly b, the corresponding amount for the price $p + \Delta p$ is approximately of the form $t \times (x - \Delta p \times v)$; [3] assuming as usual that for small variations the change in the dependent variable (x) is proportional to the change in the independent variable (p). Whence $c\ (= b_1 - b) = \Delta p \times vt$. This is a quantity of the first order, proportioned to Δp, while a is a quantity of the second order, proportioned to $(\Delta p)^2$. Accordingly, by taking Δp sufficiently small, the condition which Professor Graziani rightly postulates, viz. that a should be less than c, will be fulfilled.

A geometrical illustration may put the matter in a clearer light. In the annexed figure let OX be a horizontal line, and ABC a curve which is continuous and concave towards OX in the neighbourhood of B, the point at which the vertical height of the curve above OX is a maximum. We might suppose the line to represent the floor, and the curve the vaulted roof, of a cell, so narrow that a prisoner confined therein could only move backwards or forwards in one line, viz. OX, so low that he could

[1] " Quindi a norma della ragione dell imposta e della legge della domanda puō avenire a o minore od uquale o maggiore di c." *Op. cit.*, p. 6.

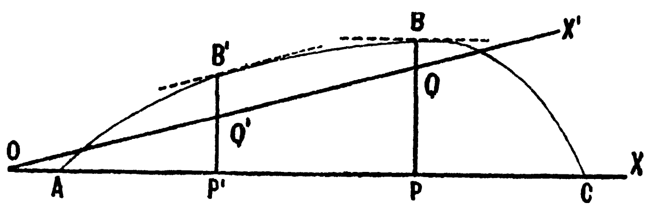
[2] Here w is put for *minus* half the second differential of the monopolist's net profit with respect to the price, at the original price (abstraction being made of the tax). This net profit being a maximum, that second differential must be negative, and therefore w positive, in general, and excepting the peculiar cases in which the second differential (as well as the first) vanishes at the point of maximum or becomes infinite.

[3] Here v is the rate at which the quantity consumed diminishes with the increase of price; what in Cournot's notation is represented by $-F'(p)$.

not anywhere raise himself to his full height. The position at which he could most nearly stand erect, which we will suppose to be the position of greatest comfort, is given by the point B, at which a tangent to the curve is parallel to OX.

Now suppose that Inquisitorial ingenuity makes the floor of the cell an inclined plane of which OX' is a section. The new position of greatest comfort is given by the point B' on the curve which is at the greatest vertical distance from the straight line OX', that is the point on the curve at which the tangent to the curve is parallel to OX'. It is evident that this point is to the left of (the vertical through) B the original point, the curve being continuously concave. Accordingly our prisoner seeking the position of greatest comfort will move from his original position towards O.

Is it necessary to interpret the parable? The amount of commodity supplied is represented by a distance measured from O along the abscissa OX. The corresponding ordinate to the



curve represents the net profit of the monopolist irrespective of the tax. This profit is a maximum for the amount OP. The angle XOX' has for its tangent t, the tax per unit of commodity; so that the total tax paid on any amount of commodity supplied, *e. g.* OP', is represented by $P'Q'$, the vertical distance of P' from the line CX'. Accordingly the net profit of the monopolist after the tax is represented by the length of the vertical intercept between OX' and the curve. It is evident that OP', the abscissa for which this intercept is a maximum, is less than OP. That is *after the tax* the amount supplied is less, and accordingly *the price is higher*.

II. and III. The fate of Professor Graziani's first proposition involves that of two others, which he thus restates: "As to whether the price will be raised or the original price will be maintained, I laid down these principles: that the first alternative will be so much the more probable if the demand approaches the conditions of relative stability," *i.e.*, as Marshall would say, is inelastic, or if the production "obeys the law of diminishing

returns," or that of constant returns.[1] But it has been shown that a tax is attended with a rise of price, not sometimes, but generally; and except in the peculiar case of a certain discontinuity in the curve representing the monopolist's profit—a peculiarity which has nothing to do with the elasticity of the law of demand, or the increasingness of the returns. No doubt it would be an allowable way of speaking to describe a tendency as null when it is insensible, or so small as to be probably counteracted by friction. It might be legitimate to regard the force of gravitation which, say, a satellite of Saturn exercises on a terrestrial object, as *nil*. But Professor Graziani has expressly cut himself off from this sort of interpretation.[2] It is as if he maintained that heavenly bodies sometimes do, and sometimes do not, attract the earth; the former alternative—the case of attraction—being the more probable, the smaller and more distant the bodies are! The cases in which he says the rise of price is most probable, the cases of inelastic demand and diminishing returns, are precisely the cases in which the rise of price is not indeed null, but particularly small, as I pointed out in my review.[3]

Here is his reasoning as to the first case:—" It seems to me that when the demand approaches conditions of stability, that is when it is not elastic, and to a large increase of price there is apt to correspond only a slight diminution of consumption, the net profit attainable by adopting prices superior to that which realises the maximum gain ought to differ little from that maximum. . . . It is true that also the difference between the amount of tax paid [before and after the tax] will not be great, since the contribution

[1] *Op. cit.*, p. 8.

[2] Non è, come sembra sostenere l'Edgeworth, che se l'imposta è molto tenue, il prezzo non si elevi perchè il guadagno del monopolista o la minore perdita di lui sarebbe così piccola da sconsigliare una modificazione, ma sta invece che quando l'imposta è tenuissima vi ha più forte probabilità che $a<c$ . . . . che la conservazione del prezzo primativo giovi più di qualsiasi modificazione. *Op. cit.*, p. 6.

[3] ECONOMIC JOURNAL, Vol. VII. p. 406. The following restatement may be acceptable. The addition to the price caused by a tax of t per unit of a monopolised commodity $= tv \div (2v + u + R)$, where v has the same meaning as in the text (the $F'(p)$ of Cournot with its sign changed); u is the rate at which the cost of production increases with the increase of the amount produced (the second differential of Cournot's $\phi(D)$,R is a quantity involving the second differential of the quantity consumed with respect to the price, about which coefficient in general we know nothing. This *addendum* is greater (1) the greater v is, u being positive, and other things, in particular R, being the same; and (2), the less u is, other things and in particular v and R, being the same. But v is greater the greater the elasticity of demand, and u is smaller the further the case is removed from that of diminishing returns, becoming indeed less than nothing in case of increasing returns. Thus the rise of price is particularly great in cases exactly opposite to those which Professor Graziani distinguishes as favourable to a rise of price.

depends upon the number of units of the product, and the consumption is supposed to be but slightly [*scarsamente*] diminished; yet, except where the tax is exceedingly light, it is evident that its diminution will exceed the difference between the net profits attainable at the two profits; that is, that c will be greater than a, and therefore the elevation of price probable." [1]

The correct statement is that, as shown above, c will *generally* be greater than a for sufficiently small values of $\triangle p$. The question is: Will the value of $\triangle p$, at which a just becomes equal to c, be particularly large or small when, *ceteris paribus*, the elasticity of demand is small? The answer is that the disturbance of price will then be particularly *small* in the common case of diminishing returns. But it is not allowable to suppose the elasticity of demand to be very slight, indefinitely small. For equilibrium would not have been reached in that case before the tax; the monopolist would have gone on raising the price until checked by a sensible elasticity.[2]

IV. So clear an issue is not presented by Professor Graziani's rejoinder to my remarks on his theory that the monopolist can never shift the whole burden of the tax. The question here is largely one of words, turning on the definition of the term "*shifting*" [*ripercussione*]. I admitted that upon a certain definition of the term, Professor Graziani's statement was not indefensible.[3] I must now admit that he seems to have entertained such a signification.

At the same time I may doubt whether the subtle distinctions of things upon which the selection of a definition turns can be adequately effected by his method. Consider the following contrasts between the regime of monopoly and that of competition.

(i) Whereas in a regime of competition the rise of price consequent on a specific tax cannot in general be greater than the tax, except in the case of increasing returns, or as an indirect result, to afford compensation to the producer for delay and impediment; in a regime of monopoly a rise of price to a greater extent than the tax may occur without these reservations.[4]

(ii) Whereas in a regime of competition, if the demand is perfectly inelastic, it is possible that the producer should not be damnified at all, the price being just raised to the full extent of the

[1] *Op. cit.* p. 9.

[2] If the $F'(p)$ of Cournot is zero, the first differential of the monopolist's net profit is positive; it will be the interest of the monopolist to go on raising the price until the elasticity is just sufficiently great to reduce the first differential to zero.

[3] ECONOMIC JOURNAL, Vol. VII. p. 405, note.

[4] See Cournot, *Recherches*, Art. 33, p. 69, and contrast Art. 51, p. 104.

tax, and the consumption not being diminished; in a regime of monopoly this is not possible, since, as above pointed out, the demand cannot have been before the tax perfectly inelastic.

Professor Graziani seems to acquiesce in the first proposition,[1] as indicated in my review. Nor does he deny the second proposition. But it is hard to see how either could be discovered and proved by his methods.

V. A rejoinder is hardly called for by Professor Graziani's concluding remarks on the dangers of mathematical reasoning. The withers of the mathematician are not wrung by these commonplaces. The use of the method is not necessarily attended with an exaggeration of its importance. The inability to use it is not a qualification for appreciating its usefulness.

Letters of David Ricardo to Hutches Trower and others, 1811—1823. Edited by JAMES BONAR and J. H. HOLLANDER. (Oxford: Clarendon Press. 1899.)

THE editors have brought to their joint task minds separately trained in Ricardian exegesis. Each of them had independently by his own methods of analysis and commentary illustrated a set of Ricardo's letters: Dr. Bonar those addressed to Malthus, Dr. Hollander those addressed to M'Culloch. Now they apply their united power of critical apparatus to a third set of Ricardo's letters, throwing additional light upon his life and doctrine.

All that we have learnt of the personality of Ricardo, whether from the edited letters or from unpublished memoirs and literary tradition, shows him as more human than unsympathetic critics of his abstract theories have imagined. The trait of character which the letters now before us bring out most conspicuously is public spirit. It is not irrelevant in an Economic Journal to allude to some passages of a political complexion which, read with their contexts, may illustrate how broad and liberal were the interests of the great theorist.

His zeal for Parliamentary Reform was ardent:—

"There is no class in the community whose interests are so clearly on the side of good government as the people. The suffrage must be extensive . . . and the voting must be by ballot" (p. 52, *cp.* pp. 61, 69).

With reference to the Peterloo massacre:—

"These large assemblages of the people may be regretted, they

[1] *Op. cit.* p. 6, last par., and p. 7

may in their consequences be productive of mischief, but if the security of our freedom depend on our right to assemble and state our wrongs, then we must patiently suffer the lesser evil to avoid the greater " (p. 85).

Of the repressive " Six Acts " of 1819 :—

" I consider them as serious infringements of our liberties . . . the efficiency of the laws in force was never fairly tried."

In favour of religious liberty :—

" I cannot help thinking that the time is approaching when these ill-founded prejudices against men on account of their religious opinions will disappear. . . . I carry my principles of toleration very far. . . . I am prepared to maintain that we have no more justifiable ground for shutting the mouth of an atheist than that of any other man " (p. 204).

" I should not see much to regret if Ireland had a Catholic establishment in the same way as Scotland has a Presbyterian one " (p. 146).

The member for Portarlington was not blind to the wrongs of Ireland :—

" The Irish landlords . . . not only do not see the benefits which would result to themselves from encouraging a spirit of industry and accumulation in their tenants, but appear to consider the people as beings of a different race, who are habituated to all species of oppression " (p. 208).

But the economist might have disapproved of remedies interfering with the principle of contract :—

" If Ireland had a good system of law—if property was secure —if an Englishman lending money to an Irishman could by some easy process oblige him to fulfil his contract, and not be set at defiance by the chicanery of sheriffs' agents in Ireland, capital would flow into Ireland and an accumulation of capital would lead to all the beneficial results which everywhere follows (*sic*) from it " (p. 172).

Our knowledge of Ricardo's doctrines is confirmed rather than extended by these letters. There is no very important " find," such as rewarded the former labours of our editors when it came to light that Ricardo in his last year had explicitly acknowledged " time " along with " quantity of labour " as a condition of value; anticipating the objections raised by the author of the *Critical Dissertation on Value,* and removing the doubts occasionally felt even by friendly interpreters. This consummation of the Ricardian doctrine of value is merely indicated in one of the later letters to Trower. Elsewhere, so far as we observed, the notion

of real value is presented with the same abstract simplicity as in the less explicit passages of the *Principles* :—

"I do not say that the labour expended on a commodity is a measure of its exchangeable value, but of its positive value. I then add that exchangeable value is regulated by positive value, and therefore is regulated by the quantity of labour expended" (p. 151, *cp.* pp. 155, 162).

Some difficult passages in the *Principles of Political Economy and Taxation* obtain incidental illustration from passages in this volume. For instance, certain instructive paradoxes in the chapters on Taxes on Gold and Taxes on Profits are enhanced by the highly abstract but perfectly correct reasoning which Ricardo applies to a problem which, as we interpret, may be stated thus: A tax is imposed on the profits in every business except that of the miner, the mines which "supply the standard" being supposed to be in the country; how would the prices of commodities be affected (1) *ceteris paribus*, (2) if we "in this situation of things suppose money to rise in value" (p. 104). The question touched in one of the notes to the *Principles*, whether more money would be required to circulate commodities if their prices be raised by taxation, is treated in the same spirit in one of the two documents in Ricardo's handwriting which have been found among the Trower manuscripts (p. 235). As the former letters prepare us to expect, many of the points raised are within the range of theses which Ricardo was perpetually defending against Malthus, *e.g.* :—

"Does the supply of corn precede the demand for it, or does it follow such demand?" (p. 124).

We read of some *Notes* prepared by Ricardo on the subject of his differences with Malthus. The discovery of these notes is still, as the editors say, a *desideratum*. They have caused it to be less urgently desired by all that they have done to satisfy the doubts which had been felt by economists as to the interpretation of Ricardo.

The Distribution of Wealth. A Theory of Wages and Interest. By JOHN BATES CLARK. (New York: Macmillan Co. London: Macmillan & Co.) 1900.

PROFESSOR CLARK labours under a disadvantage incident to the originators of doctrines that have become widely accepted. If the general reader ever dips into Locke or Bacon, he is apt not to be duly impressed with their originality, just because the truths revealed by them have now become common property. A similarly mistaken impression may be formed about this volume,

in which the author has incorporated the substance of much that he has contributed to periodicals in the course of the last twenty years. But literary justice requires that we should attribute independent origination to most of his reflections, priority to those which were published before the epoch 1890.

The leading idea of the book, distinguishing it from a future volume which will treat of progress, is the conception of the "static" condition of economics, much the same as Professor Marshall's "Stationary State," in which the "general conditions of production and consumption, of distribution and exchange remain motionless" (*Principles of Economics*, Book V. ch. v. § 2). And yet "it is full of movement; for it is a mode of life" (*ibid.*); or, as Professor Clark says, "industry is always action" (p. 59). That combination of stability and movement which the physicist briefly designates as "steady motion" (*cp.* Marshall, ECONOMIC JOURNAL, Vol. VIII. p. 41) Professor Clark expresses with the amplitude of literary illustration. Flowing water forms his favourite metaphor. As the water-power which the manufacturer buys is permanent, though the particles of water come and go, so capital as a whole is permanent, while particular bits of "capital-goods," as Professor Clark prefers to say, are perishable. It is thus that we are to understand Mill's fundamental proposition that capital is consumed. Another of Mill's fundamental propositions, that "capital is the result of saving," is accepted by Professor Clark only with reference to the *genesis of new capital* (the emphasis is his). "The maintenance of it," he says, "does not require abstinence" (p. 139).

"In the static state there is no abstinence" (p. 136).

"Let us . . . plant a forest of such slow-growing trees that it will take fifty years to bring one of them to the point of maturity at which it will be ready for cutting. Let us arrange the trees in rows, and plant one row each year. During this part of the process there is waiting to be done. . . . After fifty years, the cutting begins; and now all waiting is over. We may cut every year a row from the ripe end of the forest, and plant a row at the opposite end. . . . The setting out of a new row of trees is now a very different thing from the planting of the original row fifty years ago; for in a sense the present planting yields firewood at once" (p. 132).

Among many just observations on the nature of capital may be noticed the connection attributed to two variables, which Mill sometimes treats as independent (*Political Economy*, Book IV.), the amount of capital and the state of the productive arts.

"The men who are working with the smaller capital perform one set of acts, and those who have the greater capital in their hands perform another set. Arts are always practised in new and changed ways when capital multiplies itself and takes the shape of costly and elaborate machinery" (p. 159).

Capital, too, is "completely transmutable in form," while permanent in quantity. "Society can quit making one kind of instrument and make another" (p. 186). This variation in the forms of production adapts itself to demand.

"The value of goods on the one hand, and the productivity of the two agents, labour and capital, on the other hand, depend on the same general law. . . . It may be called a law of variation of economic results, and if it were stated in its entirety it would give unexpected unity and completeness to the science of economics" (p. 209).

Considering the relation between the value of goods and their final utility, Professor Clark dwells on the distinction between the last increment which the consumer may add either to the number of articles of a certain sort, *e.g.*, coats, or to the quality thereof. The former, "the accepted" view, would make commodities much more valuable than they actually are.

"Figuratively speaking, in a very good canoe these are a dead tree, a log, a dug-out, a convenient sailing boat, and an elegant one" (p. 239).

"Each element in it is a final utility to some class, and it is that class only whose mental estimate of it fixes its price" (p. 214).

"Things sell according to their final utilities, but it is their final utilities *to Society*" (p. 243).

"Society as a whole is the appraiser of goods" (*ibid.*).

This use of "society as a whole" may help us to understand the statement concerning the "ultimate unit of value," that it corresponds to "the pain suffered by society as a whole in the final period of daily labour" (p. 392).

Some exceptions here and there may perhaps be taken to the expressions which we have quoted. Thus is it so certain that no "abstinence" is required in order to keep up the existing stock of capital? The owners of the forest which was taken as a type must at least abstain from cutting down the immature trees for the sake of making a bonfire or some other immediate, though (comparatively with what would have been obtained by waiting) small advantage. But in the main, we submit, the passages briefly indicated with their contexts contain a body of doctrine which will be generally accepted.

Some other dicta strike us as not equally certain, rather as "probable" in the Jesuitical sense of opinions which have been held by "grave doctors," and may accordingly be followed, notwithstanding the misgivings of common sense. Three almost casuistical inquiries may be arranged under the traditional triple division of the parties to distribution.

(1) The rent of land is not sharply demarcated by Professor Clark from the payment for other agents of production. He dwells more on the similarities than the differences between the two categories. He is deeply impressed with a truth which Professor Marshall has expressed in the following passage :—

"Land is but a particular form of capital from the point of view of the individual manufacturer or cultivator. And . . . the existing stock of it tends to be shifted from one use to another till nothing could be gained for production by any further shifting. (*Principles of Economics*, Vol. IV. Book VI. ch. ii. *Cp. ibid.*, Book VI. ch. ii. § 13, and Book VI. ch. ix. § 6.)

In Professor Clark's words :—

"The earnings of every kind of capital-goods can be brought into the form of surpluses, and land is not unique in this particular. . . . The positive power of each bit of land to create wealth fixes the rent of it, just as the positive power of each unit of capital to create wealth fixes the interest on it" (p. 345).

What Professor Marshall, in the context of the passage quoted, describes as "the other side," the peculiarities of land, is not made prominent by Professor Clark's phraseology and forms of thought. And perhaps this omission is proper while we confine ourselves to the *static* condition. It leads, however, to a somewhat harsh use of familiar terms, *e.g.*, "Total interest equals total rent."

(2) A question which cannot be regarded as verbal is raised by the passages which indicate the author's views on distributive justice. He tells us "that the question whether the labourer is exploited and robbed (ch. i.) depends on the question whether he gets his product." And what getting his product means is explained in the following passages :—

"We are to get what we produce—such is the dominant rule of life; and what we are able to produce by means of labour is determined by what a final unit of mere labour can add to the product that can be created without its aid" (p. 180).

"If each productive function is paid for according to the amount of its product 'thus reckoned,' then each man gets what he himself produces."

"The product of labour everywhere may be disentangled

from the product of co-operating agents and separately identified."

"If terms be defined with care, final productivity and specific productivity mean the same thing."

However terms are defined, the doctrine as we interpret comes to the old doctrine—as old at least as Burke's *Thoughts on Scarcity*, in which he invokes "the laws of commerce" against the claims of the "labouring poor"—that the division of the total produce effected by the play of the labour market, or which would be effected if the market played freely, constitutes the best possible distribution. Doubtless it is difficult to find a better. Yet there are those who doubt whether a fair wage may not be defined by some other criterion than the produce added by the marginal labourer, whether our author has not too slightly dismissed the aspirations embodied in other definitions.

(3) In another respect it may seem that Professor Clark harks back to classical usage when he throws into the shade the entrepreneur as a party to distribution.

"The prices that conform to the cost of production are, of course, those which give no clear profit to the entrepreneur" (p. 70).

"Cost price is, of course, no-profit price. They afford, in the case of each article, enough to pay wages for the labour and interest on the capital that are used in making it; but they give no net surplus to the entrepreneur as such" (p. 79).

"The static conditions assumed in the present study preclude the existence of such entrepreneur's gains" (p. 204, *cp.* p. 111).

"If competition worked without let, entrepreneurs, as such, could never get and keep any income" (p. 410).

We are well aware that similar views are held by many grave doctors on the European Continent. And doubtless the reservation made in the words "as such" is capable of explaining away any paradox. Yet before subscribing to our author's "of course," one would like to know what the proposition is intended to contradict; who they are who affirm, and in what context, that entrepreneurs "as such" do make an income. But we are sensible that such questions cannot be adequately discussed within the narrow limits available at present.

Bimetallism: a Summary and Examination of the Arguments for and against a Bimetallic System of Currency. By MAJOR LEONARD DARWIN. (London: J. Murray. 1897. Pp. 341.)

THE name of Darwin subscribed to the plan of examining arguments on both sides suggests scientific power and judicial

impartiality. These auguries are not deceptive, and this study on bimetallism is distinguished above the great mass of monetary controversy by its comprehensiveness and candour. Major Darwin goes far towards realising a project which has been sometimes entertained in academic circles—to abridge dispute by formulating certain general propositions to which moderate "metallists" of either persuasion could give their adhesion. The extreme partisans, indeed, of either cause will be little satisfied with our author's method of patiently balancing probabilities and utilities. He tells the hasty dogmatists: "I have found the path of inquiry so strewn with difficulties, many of them apparently insurmountable, that I cannot pretend to point out a royal road to a quick and certain decision."

In the unusual order which Major Darwin has adopted the choice of a ratio takes precedence of the main issue; we first determine what kind of bimetallism is the best, and then consider whether that best kind of bimetallism would be better than monometallism. The "market" ratio is contrasted with a "low" ratio, that is, one according to which gold is rated in terms of silver at a lower value than that which prevails in the market at the initial period. Against the plea that a low-rated bimetallism would afford a just compensation to debtors for the injury inflicted on them by the recent fall of prices, it is urged that the number of creditors who would thus be inequitably injured might exceed the number of debtors who would be justly compensated. Against the advantages which gold-using countries might derive from a low ratio is to be set the disadvantage accruing to silver-using countries from a fall of prices. There is, however, some reason to believe that the prices in silver-using countries would not fall at the introduction of low-ratio bimetallism as much as would at first sight appear probable. Still, silver countries in relation to gold-using rivals would be damnified by the stimulus applied to the latter.

A low ratio has, indeed, special attractions for France and other countries with a "limping" bimetallism. But against this particular national interest is to be set the special advantage which England, as a creditor nation, derives from the present system. Major Darwin employs a more *recherché* argument, which we are unable to follow. France [and the similarly situated countries] would not benefit in respect of her existing silver currency by a low ratio so much as might be expected. The amount to which her silver currency is over-valued, some £47,000,000, may be looked upon as a Government credit issue,

which would be extinguished by the introduction of a low-ratio bimetallism. Accordingly, prices would fall in France, relatively to other countries; and, in the process of rectifying this inequality, France would suffer by exporting goods for which she would not receive goods "available for distribution," only precious metals, in return (p. 54). As to the argument that the available supply of money will be larger the higher the gold price of silver, Major Darwin thinks that this effect would last only while the mining industries were accommodating themselves to the new relative value of the precious metals. "After the completion of such an adjustment," he says, "I am unable to see why it is thought that one ratio is likely to produce a greater annual increment of metallic money than another" (p. 96).

Altogether Major Darwin decides against the low ratio, much influenced by what may be called the ethical argument. "The mere proof that beneficial results will flow from any act is not enough to prove its expediency. There is many an individual whose removal from the world would be an unquestionable and undoubted benefit; but that does not, even in such a case, make murder expedient. . . . We cannot be certain that the evil due to permanent apprehensions of further arbitrary changes in the effect of contracts would not more than outweigh the benefits due to any temporary inflation of trade. . . . If we once give way to the temptation to raise prices artificially, we shall find it harder to resist similar movements in future."

There seem to be only three considerations which could induce our author even to entertain the establishment of a ratio lower than the one prevailing in the market. First, India with its present currency could not accept a form of bimetallism which would lower the gold price of the rupee (p. 72). Again, "If the causes of the recent fall in prices have not yet produced their full effects, it is evident the fall will continue even if the market ratio is adopted. . . . If our object is to steady prices . . . we should adopt the ratio which would tend to produce the existing actual level of prices as its ultimate or normal effect; and this ratio may be presumed on this assumption to be somewhat lower than the existing ratio" (p. 74). Lastly, in view of the attitude of France and the United States, to resist all compromise in the matter of the ratio is practically to support monometallism (p. 335). But in Major Darwin's well-balanced judgment, "considering the question of a compromise with those who desired to use bimetallism as an engine for raising prices, we have to weigh the strength of our objection to such a

course against the strength of our desire to establish any form of bimetallism. As the evils of an artificial depreciation of the currency are abundantly clear, and as the choice between bimetallism and monometallism is not free from doubt, it appears to me that almost any compromise with those who advocate this reform on such grounds ought to be resisted."

The rejection of the low ratio greatly simplifies the main issue which, under the head "Bimetallism *versus* Monometallism," occupies the central part of the book. The first and foremost argument is that the double standard tends to be stable in value, the fluctuations proper to each metal proving mutually corrective. This argument can hardly be controverted as regards quality or direction. "It hardly seems possible to deny that bimetallism would produce a certain steadying effect," says Major Darwin. But with his usual candour and circumspection he adds that the *extent* of this effect is open to question—a consideration which "should, at all events, make us pause before attaching any very great weight to this plea in favour of bimetallism."

Major Darwin endeavours to strengthen the plea by a new argument, which we understand thus. The demand for the precious metals to be used in the arts is more stable than the demand for metallic money, the latter being subject to great variations owing to changes in monetary legislation. Hence "the greater the proportion of the standard commodity employed in the arts, the steadier will be prices as measured by that standard." But, the volume of the value of metallic money being considered as constant (*cp.* p. 43), the proportion of the standard commodity employed in the arts will be approximately twice as big with effective bimetallism as it would be with universal gold monometallism. *Pro tanto*, therefore, additional stability will be secured.

The variation of the price-level in time is not the only instability which bimetallism tends to correct; there is also the variation in the exchanges between countries with different standards. Major Darwin agrees with the Gold and Silver Commission that "everything which hampers complete freedom of commercial intercourse between two countries, or which imposes on it any additional burden, is undoubtedly an evil to be avoided or removed if possible." The evil is no doubt sensible, but, as Major Darwin observes, experts differ widely in their estimate of it. In a later part of the book he examines some indirect effects of international trade; and concludes: "I see, therefore, no net gain to gold-using countries to be obtained by forcing

up the value of silver, unless it is a definite step in the direction of obtaining a steadier standard of value, or of minimising the fluctuations in the rate of exchange."

Against the general advantages of bimetallism which have been indicated must be weighed the disadvantages. There is first the general objection that law cannot impart value—that an artificial ratio could not be maintained. Major Darwin had already in his introductory chapters considered this sort of objection, and concluded (p. 34): "Whether the appeal is made to the best available authorities, or to historic facts, or to theoretical arguments, the verdict as to the maintenance of *properly selected* legal ratio is, I think, on the whole favourable to the bimetallists."

Major Darwin is not afraid of bimetallism breaking down: "With market ratio bimetallism, desertions from the Bimetallic Union need not necessarily cause the system to fail generally; and it is, moreover, difficult to see what should tempt any nation to disregard their obligations if that ratio were adopted" (p. 139). "Contracting out" of the double standard would be rare, he thinks, under a bimetallic system with a market ratio, perhaps under any bimetallic system. "About fifty years ago, when the same scare prevailed about gold that now prevails about silver, a certain great water-power in Massachusetts was leased at a rate of so many pennyweights of *silver*. The inconvenience of this plan prevented it being common" (p. 105).

Other objections—as that silver coin would be inconvenient to carry about—need not detain us; and we might expect the author now to deliver judgment. But at this stage he interposes a long section on "rising and falling prices"; purporting to deal with "disadvantages attached to future currency arrangements if bimetallism is not adopted." The disadvantages considered should, perhaps, rather be described as those inferred from recent experience, or those apprehended in the near future.

The subject thus indicated presents the following four inquiries: (1) If bimetallism had been effectively maintained, would the fall in prices have been less rapid? (2) If prices had fallen less rapidly, would it have been better for the general well-being of the community? (3) Are prices likely to continue to fall too rapidly under existing conditions? (4) Will the reintroduction of bimetallism check the action of any of the causes tending to produce this fall in prices without producing any evil effects?

The first investigation leads over the beaten ground of the quantity theory. Major Darwin holds a just course between the two extreme positions: that the quantity of precious metal does not act at all, and that it acts simply and proportionally, on the price-level.

The effects of a fall in prices are traced under the heads of production and distribution. Major Darwin agrees in the main with the bimetallists as to the numbing influence on industry, the drag on production, caused by falling prices. Doubtless the troubles due to an appreciating currency may have been exaggerated; "but, in my opinion," says Major Darwin, "the merits of monometallism and the dangers of bimetallism have been far more grossly and persistently exaggerated."

With regard to distribution, we have to consider whether it is better that there should be stability of prices as tested by the commodity standard, or the labour standard — whether it is better that the unit of money should constantly procure the same amount of commodities, or be procured by the same amount of labour. *Primâ facie,* "looking merely to the question of distribution, the labour standard, or that in which prices fall proportionately to the increase of production, would appear to be the best, because the benefits of progress would be more evenly distributed among all classes of workers, . . . though it certainly has the demerit that the receivers of fixed payments —including the idle partners—would often share in the benefits of the progress due solely to the exertions of others." As to the question of abstract justice between debtor and creditor whether the former expected to be repaid according to the commodity or the labour standard—Major Darwin rightly, in our judgment, rules: "the question never entered his head in anything like that form, and all that justice requires is that we should not make unnecessary and arbitrary alterations for the benefit of one party at the expense of the other." This *primâ facie* presumption is modified by the circumstance that a variation in general prices, as measured by either standard, can only be an average or type. If the average price of the output of commodities per man per hour is constant, then in many industries prices must fall below that limit. So, if prices measured by the commodity standard are on an average constant, many prices must rise above that limit. This consideration, it is argued, points to the selection of a standard occupying an intermediate position between two extremes. But, as the evils due to a fall of prices below the one limit are greater than those due to a rise

of price above the other limit, the commodity standard should be the one most nearly approached.

Another argument favourable to the commodity standard is based on the prevalence of charges which increase proportionately to the work done independently of any movement in general prices, such as mining royalties and railway charges which are seldom changed. "The conditions of trade cannot be healthy if those managing industrial concerns are placed in such a position that any increase of production will be an injury to them."

Thus the answers to the first and second of the proposed questions are affirmative. Bimetallism, had it existed in the recent past, would in all probability have beneficially mitigated the fall of prices. But what has this to do with the future about which we have to deliberate? In reply to his second pair of questions Major Darwin expresses himself—very properly as it seems to us—with great hesitation: "It is questionable if the state of trade during the last two or three decades should carry much weight as a permanent guide with regard to our future currency policy." In fact, this special inquiry about the recent past seems not to carry us much beyond the general argument based on the probability that a double standard is more likely to be stable than a single one. What should we think of a physicist who, recommending the multiplication of observations, should stake his argument on the question whether in a particular instance, the last that might have come under notice, to have proceeded to a second observation would have improved the result! The very theory of probabilities on which the presumption of increased stability rests requires that sometimes that presumption shall not be fulfilled. The advice to an investor not to put all his eggs in one basket does not depend mainly on the question whether or how much on a particular occasion he may have lost by not doing so. However, the most recent experience has naturally most effect on popular belief, and Major Darwin could not well have avoided topics round which the battle of controversy rages most fiercely.

After examining almost all the arguments for and against a bimetallic currency, he thus temperately sums up: "My own view is that whatever course we adopt we are stepping into a future for which the past gives us most inadequate guidance, but that, on the whole, the balance of probable benefits and evils is distinctly in favour of market ratio bimetallism."

Opinion will differ upon the practical value of this conclusion. It turns upon estimates of probabilities, admitting of legitimate

divergences. But there can be only one opinion as to the method and spirit of Major Darwin's investigation, as to the diligence, the candour, the intellectual sympathy which he has evinced.

If we were asked to recommend one book, and one only, on the subject of bimetallism for a college library, or a student who had some knowledge of political economy, we should be much disposed to name this one. But we are not blind to the difficulties which the book presents. The order is very far from lucid; as the reader may have gathered from the desultory character of our references to the pages. Nor has the writer that power of investing a dry subject with interest, that charm of style by which one or two eminent bimetallists have advanced their cause. Nor does he teach with the authority which belongs to a recognised leader. Nor has he strengthened his statements so much as he might have done by reference to recognised authorities. No doubt it is a delicate question in economic and indeed in all didactic literature, how many references are required? Swift in his letter to a young clergyman advises him to adopt a good sentence without adding "as St. Austin excellently observes." But Swift is contemplating a popular discourse, the simplicity of which is to be secured by the preliminary test of its being intelligible to his wife's "chambermaid." But on occasions where this ancillary method may not be applicable the divinity student would presumably be assisted by a reference to the Fathers. The student of economics would certainly be assisted by a reference to Professor Marshall's evidence before the Gold and Silver Commission, in connection with Major Darwin's difficult discussion of Foreign Trade. A similar observation applies to many other passages, for instance the important argument that the volume of the value of the world's currency would not be materially altered by the adoption of bimetallism with market ratio (p. 43).

A more serious complaint is, that one at least of the author's original arguments which have been indicated in the course of this review appears to be more ingenious than solid. One or two slips are calculated to weaken that confidence in our guide's surefootedness which his evident circumspection, and the very heaviness of his movements, had created. However, it must be remembered that critics, as well as authors, are fallible.

Researches into the Mathematical Principles of the Theory of Wealth. By AUGUSTIN COURNOT. 1838. Translated by NATHANIEL T. BACON; with a Bibliography of Mathematical Economics by IRVING FISHER. (New York: The Macmillan Co. London. 1898.)

A Brief Introduction to the Infinitesimal Calculus, designed especially to aid in reading Mathematical Economics and Statistics. By IRVING FISHER. (New York: The Macmillan Co. London: Macmillan & Co.). 1898.

THE character of path-breaking originality attaches in a particularly high degree to Cournot's *Recherches* of 1838. What has been said by some one not belonging to the historical school —J. B. Say, if we recollect rightly—that there was no use in studying the writers who preceded Adam Smith as they were all wrong, might be said with more truth of Cournot's mathematical predecessors. At any rate Cournot was not much indebted to them. Those who care to verify this statement and explore *les origines* will be greatly assisted by the bibliography of mathematical economics which Professor Fisher has appended to the translation of Cournot. In his judicious classification of these works the predecessors of Cournot form one category; three others begin with the works of Cournot, Jevons, and Marshall respectively. The stimulus which the *Principles of Economics* gave to the new study may be measured by the fact that since its first appearance mathematico-economic writings have been produced at the rate of eighteen a year, while for the period between Jevons and Professor Marshall the rate was only six.

We take this fact from Professor Fisher's article on "Cournot and Mathematical Economics" in the current number of the *Quarterly Journal of Economics*—an *apparatus criticus* which ought certainly to be read, and might with advantage be bound up, with the translation of Cournot. We accordingly regard it as within our province to acknowledge the very great assistance which the student of mathematical economics derives from Professor Fisher's commentary and notes on Cournot.

It will be gathered from Professor Fisher's criticisms that all the parts of Cournot's work are not of equal merit. The commentator marks off the last two chapters, some 45 pages of the translation, out of a total of 166, as "an ambitious but erroneous theory . . . vitiated throughout by erroneous conceptions of income." "About 18 other pages may be omitted without loss of continuity and without great loss of substance.

The remaining 103 pages are almost uniformly excellent, and will repay very thorough study by all who care for exact ideas and demonstrations in Political Economy." The eulogium contained in the last sentence appears to us too sweeping. There are degrees within the selected 103 pages; the student should be warned that all are not uniformly rewarding.

The highest place—on a level with whatever is most original and classical in political economy—must be assigned to the chapters (IV.—VI.) in which the now familiar demand curve was introduced, and employed in deducing theorems relating to monopoly, some of them not yet familiar.

Cournot's transition from the case of pure monopoly to that of perfect competition by the introduction of first one and then more competitors is, as Professor Fisher has remarked, " brilliant and suggestive, but not free from serious objections." It is so, in our view, not merely because the solution given by Cournot in the particular case put by him—namely, where two competitors deal in an article which, like the supplies from a mineral spring, can be multiplied without expense (*Recherches*, Art. 43) —is erroneous, but rather because he has missed the general theorem : that the solution is indeterminate where the number of competitors is small.

The last stage in the transition from monopoly to perfect competition is reached when the effect on the price which any individual can produce by varying his supply is so small as to be neglected. The condition that the increment in price corresponding to the increment of the quantity supplied by a particular individual is small admits of being elegantly expressed in symbols. But Cournot has not employed the proper expression. On the contrary, as Professor Fisher points out (in the Appendix to the *Quarterly Journal* article, Note 34), Cournot seems to assume that the quantity supplied to the individual is small in a sense which justifies its omission from the statement of economic equilibrium (the omission of D_k in the first equation of Chapter VIII). This assumption is not in general allowable. However, " in the same chapter, Cournot enunciates two other principles which have become classic, though . . . they are seldom duly credited to him." One is that in the regime of competition a tax on an article, subject to the law of increasing cost, will raise the price by an amount less than the tax; a proposition which is to be found in Mill's *Political Economy* (Book V. ch. iv. § 3, par. 1). The second proposition has, perhaps, hardly yet become classic —namely, that where the law of cost, as conceived by Cournot (his ϕ'), is diminishing [or it may be added constant]—where,

as we might now say, the supply curve in that primary sense in which it is applicable to short periods corresponding to one of the "cost curves," considered by Mr. Henry Cunynghame in the ECONOMIC JOURNAL, Vol. II. p. 41, is a continually descending [or horizontal] curve; there economic equilibrium is not possible.

Cournot next treats what we should now call "Joint demand," or rather a special case thereof. We agree with Professor Fisher that "his analysis of motives in the minds of the two monopolists is subject to much the same objection as in the case of two competitors." But we cannot agree that "Cournot's conclusions are in the main consonant with facts." "He shows among other things," says Professor Fisher, "that the control by a single monopolist of both copper and zinc will result in a lower price of brass than the control of copper by one monopoly and zinc by another." This paradox has been disputed by the present writer. Both in the case of "joint" as of "rival" demand, it is submitted that where there are two monopolists in the field, the system of bargains will be *indeterminate*. The assumption underlying both investigations, and expressly applied to the latter (*Translation*, p. 105), that "where all the conditions of an economic system are accounted for, there is no article of which the price is not completely determined"—this assumption, we submit, is fundamentally erroneous.[1]

Of the 103 pages distinguished by Professor Fisher as "uniformly excellent," there remains now only the first part of Chapter X; the latter part, Articles 72 and 73, belonging to the category of what may be omitted without much loss. The retained part is vitiated by one of those mathematical slips from which Cournot was not free.

Fortunately, there is only one other instance in which the flaw in the mathematical reasoning causes an error in the economic conclusion. But the numerous inaccuracies—not all of them mere misprints, but some actual mistakes in the algebra—prove very embarrassing to the student of the original. A debt of gratitude is due to Mr. Bacon for having carefully corrected these errors—thirty-five in all. He has also by his creditable and clear translation assisted the English reader to contemplate Cournot's work.

If our view of that work is not distorted, it is the *alpha*, but not the *omega*, of mathematical economics. It is the vestibule, but not the complete edifice.

Professor Fisher has not only "restored" the porch of economic science, but he has reconstructed the steps which lead

[1] Cp. above, E.

up to that entrance and the adjoining structures. We refer to his introduction to the Infinitesimal Calculus. The ascent is short but steep. The feeble-kneed will sometimes desiderate the zigzag windings of a more gradual approach. For instance, beginners will probably find a difficulty in surmounting the passage on the fourth page—where a distinction is drawn between the "*limit of the ratio* of vanishing quantities $\left(e.g., \ lim. \frac{\Delta s}{\Delta t}\right)$, and the *ratio of their limits* $\left(e.g., \ \frac{lim. \ \Delta s}{lim. \ \Delta t}\right)$." But doubtless the conceptions of the calculus—like the principles of virtue—are not to be acquired by explanation only; practice also is required. Professor Fisher has provided adequate exercises; and he cheers the labours of the student by indicating from time to time their economic significance. Probably it would not be possible to obtain what may be called a saving knowledge of the subject at the cost of less trouble than that which is required to master these 85 pages. They contain what is necessary and sufficient to fulfil the purpose proposed by the author, namely to "enable a person without special mathematical training or aptitude to understand the works of Jevons, Walras, Marshall, or Pareto, or the mathematical articles constantly appearing in the ECONOMIC JOURNAL, the *Journal of the Royal Statistical Society*, the *Giornale degli Economisti*, and elsewhere."

La Co-opération (*Conférences de propagande*). By CHARLES GIDE. (Paris: Larose. 1900. Pp. 311.)

THE appearance in English of Professor Gide's *Introduction* to selections from Fourier reminds us of his collected discourses on co-operation, one of which is the lecture given at Nîmes on the prophecies of Fourier. With characteristic sprightliness, Professor Gide begins by telling his audience that he is about to speak about a perfect madman (*du fou le plus complet qui se puisse imaginer*). This power of fixing attention by lively sallies is effective in a preacher. To take another example, speaking of the advantages of co-operation our lecturer says:—"Perhaps you have sometimes been so imprudent as to enter one of those chambers of dentistry, outside which one reads the enticing inscription, 'Teeth extracted here without pain.' Well, outside all co-operative shops there ought to be put up the much truer inscription, 'Saving effected here without pain.'" The encouragement to saving is by no means the principal advantage attributed by Professor Gide to co-operation. Among the "twelve virtues"

of that institution which form the subject of one of the pieces in the collection before us may be distinguished better fare, opposition to the sale of drink, interesting the women in social questions, establishment of a just price—for conscience tells us that there exists a just price of things, " a price which sufficiently remunerates the work devoted to their production, which allows the worker to live by his work"—in fine, the abolition of disputes between employer and employed. Co-operation, indeed, is for Professor Gide not only a business, but a faith. The zeal of an earlier generation glows in his pages. But he is not blinded by his ardour to the difficulties that have to be contended with. He more than once pauses to enumerate the hostile forces. First, the ladies in general are opposed to co-operative methods of shopping. The cooks in particular resent the loss of commissions [" le sou par franc"]. The French people are not good at combining. Revolutionary methods are preferred by many to the peaceful ways of co-operation. Two influential classes, the orthodox Catholics and the orthodox political economists, are silently hostile or contemptuously indifferent to the movement. It is significant that neither in the Pope's *Encyclical* nor in M. Milman's *Évolution Économique* is there even an allusion to co-operative societies. Such are the formidable obstacles against which the champion of a good cause puts forth powers rare in their combination, enthusiasm and wit.

Anticipations of the Reaction of Mechanical and Scientific Progress upon Human Life and Thought. By H. G. WELLS. (London: Chapman & Hall. 1902. Pp. 318.)

" A RARE prediction, of which the style is unambiguous and the date unquestionable"—these words, applied by Gibbon to a celebrated prophecy, are equally applicable to Mr. Wells' *Anticipations.* The social conditions which will prevail about the end of the twentieth century are set forth by Mr. Wells at the beginning of the century without oracular mystification, in plain though racy English. The veil of fictitious narrative in which his visions of the future have hitherto been wrapped is now discarded. Inductive reason is now substituted for creative fancy. In the place of the refined, but feeble people who, in our author's wonderful tale of the *Time Machine,* occupied the earth's surface, the " Eloi," if we remember rightly, we are now presented with the more realistic picture of the modern

shareholding class, irresponsible and incapable of combination. As the privileged "Eloi" were threatened by the mechanical "Morlocks," so the shareholders will give place to the "body of engineering managing men scientifically trained," who are destined to inherit the earth. Fortunately one is not called on in an Economic Journal to discuss the probability of this event, nor the propriety of the moral and religious sentiments attributed to an enlightened posterity. Nor can we be expected to follow our author as, running through almost all the departments of human activity—engineering, war, politics, education—he confidently predicts the improvement which will be made by posterity, and by implication arraigns the mistakes that are made by contemporaries. Like the great prophets of old time, he not only announces the future, but denounces the present. In this sweeping censure of existing arts and sciences, political economy is not hit particularly hard. It is hinted indeed that there is room for improvement; but the suggestions are not sufficiently definite to be discussed here. From the economic point of view the most interesting parts of the book are those which heap contempt on the class of "shareholders," the owners of property that "yields its revenue without thought or care on the part of its proprietors . . . absolutely irresponsible property, a thing that no old-world property ever was."

"There is every indication that this element of irresponsible, independent, and wealthy people in the social body, people who feel the urgency of no exertion, the pressure of no specific positive duties, is still on the increase. . . . It overshadows the responsible owner of real property or of real businesses altogether. And most of the old aristocrats, the old knightly and landowning people, have, so to speak, converted themselves into members of this new class. . . . Those who belong to the shareholder class only partially, who partially depend upon dividends and partially upon activities, occur in every rank and order of the whole social body. The waiter one tips probably has a hundred or so in some remote company; the will of the eminent labour reformer reveals an admirably distributed series of investments; the bishop sells tea and digs coal, or at any rate gets a profit from some unknown person's tea-selling or coal-digging. . . . Previously in the world's history, saving a few quite exceptional aspects, the possession and retention of property was conditional upon activities of some sort, honest or dishonest work, force or fraud. But the shareholding ingredient of our new society, so far as its shareholding goes, has no need of strength or wisdom:

the countless untraceable owner of the modern world presents in a multitudinous form the image of a Merovingian king." (Pp. 72, 74. Cp. *The Shareholding Rich Man*, p. 131 *et passim.*)

There appears to be much force in these denunciations. Doubtless a society which has no duties and no object but to amuse itself is destined to become "deliquescent," to use Mr. Wells' appropriate, yet too often iterated, phrase. But the improved education of the future may perhaps inspire even shareholders with some higher purpose. Nor is it clear to us how the contrasted "really functional social body of engineering managing men scientifically trained" is to escape the taint of shareholding. We have not observed that scientific training produces any reluctance to accept interest on savings. We may ask also whether the really "functional body" would be so coherent, as the author takes for granted? "Common ideals and interests" are not a necessary adjunct of scientific uniformity. Correct views on physical science might not form a very strong bond of political union. But in expressing an opinion about compacts other than those bargains of which the terms are settled by the play of supply and demand, we are sensible how modest is the rôle of the political economist compared with that of the prophet.

A History of the Theories of Production and Distribution in English Political Economy from 1776 *to* 1848. By EDWIN CANNAN. Second Edition. (London: P. S. King. 1903. Pp. 422.)

THIS edition is distinguished by the addition of two sections dealing with the changes in economic theory which have taken place since 1848 and the attitude of the economist towards the practical economic problems of to-day. It would be impossible for us in a necessarily brief summary to do justice to the wit and wisdom that are contained in these additional pages. We confine ourselves to noticing certain passages which are of particular interest as expressing the writer's judgment on questions of some nicety. Mr. Cannan enumerates among changes which have taken place "the displacement of capital from the head of productive requisites and its relegation to the same rank as organisation, knowledge, mental and muscular power." After giving an amusing "biograph of production," as the process was represented by the older writers, Mr. Cannan explains that in the view of the modern economists "the inanimate stock of goods does not settle how many men shall be employed; but saving

men settle how much stock there shall be, and consuming men settle by their expected demands what forms that stock shall take." With regard to the effects of combinations of wage-earners upon the earnings of labour, "modern doctrine teaches plainly enough that combinations of earners can only raise earnings if they can raise the value or the quantity of the product, and that producers can only raise the value of the product by reducing its quantity." On behalf of the modern theories Mr. Cannan replies to the complaint of the politician that the modern economist is always sitting on the fence, and will not give a plain answer to a practical question. "The truth is, in reality," says our author, "that the economist refuses to take a side when both sides are wrong, and declines to say Yes or No to a question when both the affirmative and the negative answer would make him admit what he knows to be untrue." Mr. Cannan does not trenchantly pronounce upon the relation of the modern economist towards Socialist and Communist aspirations; nevertheless, his well-balanced judgment is deserving of attention.

The sections which have been noticed form the only important novelty in the second edition. The author has resisted the temptation to re-touch what he wrote ten years ago. "Extensive changes of an unimportant character," he forcibly observes, "generally add unnecessarily to the bulk of a book, almost always destroy its consistency, and invariably confuse and annoy the serious student." While applauding this self-restraint, we regret that the author has not taken the opportunity of recanting the acrimony which characterises his criticism of the older theorists. Far from betraying any remorse, he says in the preface to his second edition: "I have great hope that what appeared to be ill-tempered blasphemy in 1893 will now be seen to be the calm statement of undoubted fact." Probably Mr. Cannan has not realised that the statement of the inaccuracies into which original authors have fallen, without express recognition of their merits, is apt to convey an erroneous impression. The pioneers of other sciences would be deprived of their due praise by this manner of "calm statement." Even in mathematics, we believe, the present generation might truthfully boast of being much better than their fathers in respect of accurate reasoning. But the modern mathematicians do not therefore in the style of Mr. Cannan pronounce that the work of their predecessors "must be visited with almost unqualified condemnation." Even where the older demonstrations are not regarded as perfectly cogent, there is attributed to them a

"heuristic" character. Genius is admired for having struck out paths in new regions where method afterwards constructs highways.

Now the classical economists are gifted with a similar originative power to which Mr. Cannan does not do justice. Their utterances about capital, for instance, are doubtless not perfectly clear. But how many in the present generation are entitled on this account to cast a stone against the older writers? He who, indifferent about the definition of words, strives to frame an appropriate conception of the long process of production—the fruits of labour continually ripening with the lapse of time, continually passing into the hands of those who have worked and waited—such a one must still seek inspiration from the classic masters, still ponder on their deep sayings, for example :—

"The miller, the reaper, the ploughman, the ploughmaker . . . derive their remuneration from the ultimate product—the bread."[1] "By what a frugal man annually saves . . . he establishes, as it were, a perpetual fund for the maintenance of a number of productive hands."[2]

Even Mill's "fundamental propositions" on capital, though it may be true of more than one of them that, in Professor Marshall's words, "it expresses his meaning badly," are yet not wholly "a hopeless farrago of blunders," as Mr. Cannan would have us believe. For instance, much instruction is to be obtained from tracing out the consequences of the supposition "that every capitalist came to be of opinion that he ought not to fare better than a well-educated labourer, and, accordingly, laid by the surplus of his profits."[3] To take a second example from a less important topic, the Ricardo-Mill theory that an improvement in the arts of agricultural production, other things being unchanged, tends to be followed by a fall in rent, is denounced by Mr. Cannan in scathing terms which convey the impression that there is not even a portion of truth, not even any plausibility in the theory. But surely there is much truth in Mill's observation with respect to a particular case of the problem :—

"It is quite in accordance with common notions to suppose that, if by the increased productiveness of land less land were required for cultivation, its value, like that of other articles for which the demand had diminished, would fall."

And even in the general case, where the amount of land offered

[1] Mill, Book I. ch. ii.
[2] Adam Smith, Book II. ch. iii.
[3] Mill, Book I. ch. v., p. 2.

is supposed to be constant, though in the absence of knowledge as to the quantitative relation [1] between outlay and product it is not certain that the alleged consequence will occur, yet from what is known about quantitative relations in general it is probable,[2] we venture to submit, that rent will fall, under the given circumstances, one of which, it should be remembered, is the inelasticity of demand for corn, tacitly but properly assumed by the classic writers.

If Mr. Cannan is not one of those sympathetic critics who exalt our admiration for the classics, he is at least deserving of high praise for the perspicacity and diligence with which he collates and emends. The number of passages requiring emendation is indeed remarkable. That the greatest masters of economic science should so often have expressed themselves imperfectly is certainly an instructive circumstance. It warns controversialists not to assume that an economic treatise is destitute of worth because it is chargeable with some obscurity and inconsistency in the use of words. We refer to inaccuracies of the sort which Mr. Cannan hits when he points out (p. 31) that J. S. Mill's definition of wealth and cognate terms would in consistency require him to exclude from that income which is annually distributed all "utilities not fixed or embodied in an object, but consisting in a mere service given." Again, the occasional use of "capital" by Mill to denote only circulating capital is formally inaccurate (Cannan, p. 117 *et passim*). Indeed, the classic use of the term "circulating capital" is open to criticism—so we interpret Mr. Cannan's frequent complaints under this head—unless it is assumed that the means which the capitalist lays out do not bring in their return in a period shorter than that by which interest is reckoned, commonly a year. Again, even in the case of so fundamental a Ricardian theorem as that which enounces the difference of rent (per acre) for different kinds of land, even J. S. Mill's statement is shown to require considerable emendation.

We may be sure that Mill, if he could have been confronted with these criticisms, would have accepted them with his usual frankness. His appreciative remarks about an earlier impugner of received statements, John Rae,[3] may be applied, with hardly any alteration, to Mr. Cannan:—"The principal fault of the

[1] Considered as a mathematical *function*.

[2] As to this application of the theory of probabilities, see *Giornale degli Economisti*, 1897, Vol. XV. p. 318. *Cp.* ECONOMIC JOURNAL, Vol. IX. p. 313.

[3] Mill, *Political Economy*, Book I. ch. xi. p. 2.

book is the position of antagonism in which, with the controversial spirit apt to be found in those who have new thoughts on old subjects, he has placed himself towards Adam Smith [and his successors]. I call this a fault, though I think many of the criticisms just, and some of them far-seeing."

The Riddle of the Tariff. By A. C. Pigou. (London: Brimley Johnson. 1903. Pp. 107.)

It is impossible within the space allotted to reviews in the Economic Journal to examine the total mass of literature on the fiscal question. It must suffice to test samples. In the last number we criticised what seemed the best book on the Protectionist side. The high honour of occupying a similar position on the other side seems deserved by the work before us.

In Mr. Pigou's lucid order two cries—that our national trade is decaying, and that our empire is falling to pieces—are considered as claiming urgency for four plans—protection in general, or limited to defence against the aggression of foreign monopolies, tariff bargaining, and Imperial preference. Advising the reader to follow carefully our author's contention that the evils are mostly imaginary and the remedies ineffectual, we shall only advert to some passages which seem particularly just or striking.

The dislocation of industry through foreign competition, which excites the first cry, is, he observes, "only a single species of a far larger genus. It is not because of Free Trade, but because the industrial army is continually advancing, that the road is strewn with abandoned baggage and lagging men." It is shown that the importation of foreign goods cannot injure our industries as a whole; since augmented imports must be paid for by augmented exports, unless, indeed, by exporting securities we are diminishing the sum total of our investments abroad. There is no evidence that we are doing so; and, even if it were the fact, argues Mr. Pigou, "it does not follow that any permanent reduction of employment would be involved. The capital withdrawn from investment abroad would almost certainly be reinvested in England."

Dumping, against which the limited kinds of protection are specially invoked, is of two kinds. Trusts and cartels in protected countries may find it profitable on the average, and, taking one year with another, to accept abroad prices considerably lower than those which they charge to the home consumer; or the foreign monopolist may pour goods into our markets at prices

which, if continued for long, would ruin him, but which he is willing to take for a short time in the hope of driving his English competitors out of business. The fluctuation caused by the first process is probably not a very serious evil; the remedy is possibly worse. "In order to keep the prices of most imports stable an extraordinarily elaborate mobile and inquisitorial tariff system would be required." The attempt to secure stability in the price of corn by the "sliding scale" did not prove an encouraging experiment. The second, more drastic, species of dumping is not proved to exist. It cannot be realised except with commodities whose production outside of England is in the hands of a Trust which practically dominates the world. For it will not be worth while for a group of American or German producers to make heavy sacrifices in order to destroy their English rivals if other foreign producers are in the field, whose competition would prevent them from subsequently exacting the higher prices out of which their compensation should come. If, indeed, the practice really existed, there would be a *primâ facie* case for temporary protection. Against it have to be weighed the practical difficulties in the way of selecting the proper cases for intervention, the time for beginning it and for leaving it off. "Can we seriously suppose that a democratic Government, pressed upon all hands by interested suitors, bewildered by conflicting evidence, nervous of offending political adherents, would prove itself equal to that Herculean task?"

A similar intrusion of the "coefficients of human ignorance and frailty" may be expected if tariff bargaining is attempted. Even if the diplomacy were in the hands of a "Cabinet of Solomons" the probability of net advantage would not be very great under the existing conditions. In this case Mr. Pigou admits it to be possible that in spite of the most-favoured-nation clause there might be a real adverse discrimination against us in the class of goods which foreigners agree to tax. But he thinks "the fact that we are all-round manufacturers, and that our exports are exceedingly various, make it improbable that the evil, if it exists at all, is particularly serious."

On the subject of Imperial preference Mr. Pigou's close reasoning should be studied in connection with the demonstrations which he has given in the January number of the *Fortnightly Review* and elsewhere. The power with which he wields the organon of economic theory is of the highest promise. One who had observed the early work of Clerk-Maxwell remarked: "it is impossible for that man to go wrong in physics." For

" physics " substitute what Jevons called the " mechanics " of industry and trade, and the dictum might be applied without extravagance to the author of the analysis that we have mentioned.

Elements of Political Economy. By J. SHIELD NICHOLSON. (London : Black. 1903. Pp. 538.)

THE scientific character of a work which is based on the author's *Principles of Political Economy* may be taken for granted. The claim of the work to the character of " Elements " may be defended, whether we consider the points in which it differs from, or those in which it agrees with, the larger treatise.

One difference adapted to the requirement of beginners is the suppression of controversy. The references to economic literature are reduced, and presented in a form which, it may be hoped, is calculated rather to allure than alarm the youthful student. The comparative terseness of the compendium accounts for another differentiating characteristic, a certain trenchancy proper to brevity. We shall dwell on one or two instances as illustrating the difficulties which obstruct the communication of economic knowledge in elementary doses. In the larger treatise Professor Nicholson had observed in the course of his lucid discussion of monopoly values (*Principles*, Vol. II. p. 66) that the monopolist must be able to adjust price and supply to any change in demand. " The monopolist, in the face of a fall of demand may indeed maintain his minimum price, but in most cases he will no longer obtain the maximum return possible, and in some cases the maintenance of the price might involve an actual loss." This is perfectly correct; both the assertion that the price which the monopolist will fix in the new conditions will not in general be the same as the old price, and the suggestion that the new price will be lower than the old price. But in some circumstances it is possible (as pointed out in the ECONOMIC JOURNAL, Vol. VII. p. 235) that the fall in demand might be accompanied by a change of elasticity, such that it might prove to the interest of the monopolist not to lower the price, but to raise it, or at least to keep it the same. Can it be right then to say unconditionally in the *Elements* (p. 248) : " If with a fall in demand he [the monopolist] tries to maintain the old price he will no longer obtain the maximum profit possible under the circumstances " ? Quite right, we submit, regard being had to the character of a compendious work necessitating round statements. A fall in

demand will be attended with a fall in monopoly price, unless there at the same time occurs a considerable diminution in the elasticity of demand. But as there is in general no reason to believe that a fall in demand will be attended with a change of elasticity in one direction rather than another, so it is most probable that a fall in demand will be attended with a fall in price; that is the general or typical case. By a parity of probable reasoning our author is quite justified in stating, without further reservation than is implied in reference to the mathematical treatment of the subject: "Any improvements . . . that enable the same amount of land to raise the same supply at less marginal cost have the same effects [as "improvements that enable the same amount of produce to be raised from less land"], namely, a fall in money rents." (*Cp.* ECONOMIC JOURNAL, Vol. XIII. p. 626.) Such round statements of economic truth are sometimes necessitated by the writer's want of space and the reader's want of training. Where under the conditions it is only possible to convey one idea it should be clear and appropriate to the typical case. To attempt more might result in the learner's obtaining no clear idea at all, or perhaps a wrong idea, the exception without the rule—a state of mind like that of the American Protectionist of whom it was metaphorically said that he could see a fly on a barn-door without seeing the barn or the door. Doubtless it is better to teach both the rule and the exception when the subject is of sufficient importance to justify a full exposition. The clear and candid statement of "theoretical exceptions to Free Trade" (*Elements*, p. 491, p. 358) does not obscure the general truth that "although there are many cases 'worthy of deliberation' there are very few worthy of adoption."

Among features of resemblance between the *Elements* and the *Principles* which conduce to the convenience of beginners is that arrangement of the subject according to which Distribution is discussed before Exchange. Since in the modern world Distribution is affected by a play of supply and demand it is tenable that in a logical order the theory of value should have precedence. It is thus that a mathematical student may first master the abstract theory of dynamics, then apply the theory to the motions of the heavenly bodies. But all are not disposed to "take the high priori road, and reason downwards." The interests of the visible world must be displayed to the average student in order to allure him to the regions of abstraction. The elementary teacher may be well advised in not affecting a too severely logical order. Like the poet he should

rush into the midst of things. As the poet in the course of prolonged digressions still keeps by occasional allusions the leading personage in the reader's thoughts, so throughout our author's book on Distribution we are reminded by occasional references that the subject is dependent on the theory of Value (*Elements*, pp. 22, 66–7).

There is a further reason in favour of the arrangement adopted by Professor Nicholson: it is Mill's arrangement. The treatment of Progress in a separate Book is similarly justified. Considering that Mill's Political Economy still forms a part of the curriculum in more than one distinguished University, a textbook which will serve as a *vade mecum* for travellers along that smooth but not always easy road to economic knowledge may well be a *desideratum.*

National Progress in Wealth and Trade. By A. L. BOWLEY. (London: P. S. King. Pp. 88. 2*s*.). 1904.

MR. BOWLEY'S work belongs to a small class—Soetbeer's *Materialien* may be instanced as one of the few other examples—characterised by impartial statements, which command the respect of disputants on either side of a heated economic controversy. The modesty of the true statistician contrasts favourably with the hectoring tone of political partisans. Mr. Bowley's main position is thus cautiously stated:—"Our information is not sufficient to allow us to form an absolutely certain judgment as to our recent progress." "It is conceivable that the facts that we do not know may present an appearance opposite to that of the facts that we do know, as it is conceivable that the hidden hemisphere of the moon differs from that which we see; but it is *primâ facie* improbable that the same main causes are presumably acting in the unknown as in the known." All the phenomena in the observed economic hemisphere—the changes of occupation, the progress of wages, the increase of national income, and so on—suggest that we have made considerable progress in wealth and welfare during recent years.

It is true that there has been a diminution in the numbers employed in certain occupations, in particular the textile trades. But what of that, if the numbers employed in other occupations, such as the production of iron and steel manufacture, have increased? The shifting of occupations is often a mark of progress to a higher level. Men earn more, not only because the same

work is paid more highly now than formerly, but also because the proportion of men in the better-paid occupations has increased. Half of the total increase of average wages—some thirty per cent. in all—during the last twenty years is accounted for by the change from the less to the more highly skilled occupations. From this point of view the drift from agriculture into other industries does not seem an unmixed evil. In 1886 the average weekly wage of English agricultural labourers (including all perquisites) was about 14*s.* 6*d.*, while the average for the great bulk of other trades was about 24*s.*

The increase of 30 per cent. which we have mentioned refers to money wages. It is further to be taken into account that the prices of most commodities purchased by the working-classes have fallen by about 8 per cent. It would appear, therefore, that the increase in real wages is some 40 per cent. This estimate derives confirmation from Mr. G. H. Wood's brilliant calculation, by way of index-numbers, of the increase in the consumption of necessaries and common luxuries. On the other hand is to be set the increase of rent in towns. Mr. Bowley, with characteristic caution, contents himself with the conclusion that "the value of £1 in the hands of a working-man has, at any rate, *not fallen* in the last twenty years; while the evidence, on the whole, is in favour of the rise in the purchasing power of money."

To return to the trades, of which the decreasing numbers have excited alarm, it is to be noted that the products per head of population, as measured by the quantity of raw material used up, have increased in many cases. Mr. Bowley does not pretend that there has been progress in all trades—linen and silk, for example. But he finds that the falling off in the export of some manufactured commodities is compensated by the increased export of others. This compensation may occur in ways which escape the attention of uninstructed observers. "Germany imports wool from Australia; Australia imports machinery from England; England imports chemicals from Germany; an increase in the last might easily cause an increase in the second, but the loss (if any) to the English chemical manufacturer would not be obviously connected with a gain to the machine producers." It is justly observed by Mr. Bowley that the amount of loss incident to the substitution of one export for another depends mainly on the rapidity of the change. But there is no evidence of change so rapid as to be disorganising on a large scale.

The vulgar belief that our exports may be indefinitely reduced by the increase of foreign imports, as it cannot even be

conceived in thought, so it derives no support from fact. The more refined suggestion that our exports may, through foreign competition in the home market, be reduced, not in total value, but in the number of branches, so as to become more exposed to the vicissitudes of chance—this certainly conceivable case is not proved to exist. "Our exports have consisted, and do consist, of a great miscellany of goods of every description. The guarantee of their continuance is their variety." Nor do the statistics lend any confirmation to another ingenious suggestion, that our exports tend to be the product of low-paid and unskilled labour. Rather, the increase in the numbers employed in the iron trade, even more than in the quantity of iron used, suggests that employment is increasing in the more advanced metal trades (such as machines and ships) rather than in the earlier forms (refining, casting, etc.). This explanation is indeed admitted by Mr. Bowley to be "conjectural"; yet better founded, we submit, than the contention that our manufacturing power is becoming decadent and degraded. "The handling of metals," says Mr. Bowley, "is as meritorious as the handling of textiles, the making of machines as the making of cloth."

One of the circumstances which has excited great alarm, the slow increase in the volume of our exports, appears to be connected with a very satisfactory incident, namely, that we are now obtaining a large return of imports per unit, so to speak, of exports. We are, in Mill's phrase, getting our imports cheaper "in the sense of cost," the sense in which "a country gets a commodity cheaper when it obtains a greater quantity of the commodity with the same expenditure of labour and capital." This inference, from the change in the average prices of imports compared with the corresponding charge for exports, has been set forth by Mr. Bowley in the ECONOMIC JOURNAL for September 1903.

Some of the above-mentioned lines of proof—not the last one, of course—may be employed to prove the progress of foreign nations. "The figures we have indicate considerable progress and, as in the case of the United Kingdom, the burden of proof rests as yet with those who deny it." Mr. Bowley argues that the progress in the export trade of foreign countries involves an increased demand for the products of their customers. His reasoning is economically sound, but it is not altogether reassuring to patriots who prefer power and pre-eminence to prosperity. Let us suppose, for the sake of argument, that those are in the right who are not satisfied with the progress of their country unless it

is greater than the progress of other countries. And let us enter tain the further supposition that, if the new inquiries which Mr. Bowley suggests were carried out, the hitherto unseen economic hemisphere should prove less fair than that which has been observed. There would still remain the question whether the remedies proposed by Protectionists would correct the relative or absolute *malaise* of trade. This is a question that Mr. Bowley has very properly not touched. It belongs to political economy rather than to statistics.

Ireland in the New Century. By the Right Honourable Sir HORACE PLUNKETT, K.C.V.O., F.R.S. (London: Murray. 1904. Pp. 300.)

SIR HORACE PLUNKETT'S book belongs to the art, rather than the science, of Political Economy. It is related to the ordinary treatises, as the prescription for a particular case is related to a demonstration in anatomy. The case is a very complicated one; the *malaise* cannot be ascribed to any single cause.

There is first "the influence of politics on the Irish mind." The absence of captains of industry from the councils of the political leaders is regretted. The methods employed for the attainment of Home Rule have been injurious to the industrial character of the people. Agitation, as Thomas Davis said, in a passage aptly quoted by our author, "leads to much disorganisation, great unhappiness, wounds upon the soul of a country which sometimes are worse than the thinning of a people by war." "The practice of boycotting," observes Sir Horace Plunkett, "is the very antithesis of industry, creating an atmosphere in which industry and enterprise simply cannot live."

It is not often that one whose opinion is as valuable as our author's has the courage to express it as openly. When the Homeric prophet is urged to declare the cause from which his countrymen are perishing, he will not speak until he is secured against the wrath of a man whose power over the Argives is very great. But the revealer of unwelcome truths about the cause of Irish distress does not hesitate to offend two powerful orders of men, the priests as well as the political leaders. He complains of excessive and extravagant church-building at the expense of poor communities. Referring to the multiplication of elaborate monastic and conventual institutions, he says: "I cannot believe that so large an addition to the 'unproductive' classes is economically sound, and I have no doubt at all that the

competition with lay teachers of celibates living in community is excessive and economically injurious." A more sweeping condemnation is based on "the reliance of that religion on authority, its repression of individuality, and its complete shifting of what I may call the moral centre of gravity to a future existence." To these causes are attributed a "listlessness and apathy in regard to economic improvement which amounts to a form of fatalism, and in backward districts a survival of superstition which saps all will and purpose."

Defects in the educational system of Ireland are pointed out with equal freedom. Education has been in Ireland too long a thing apart from the economic realities of the country; not adapted to correct "the defects in the industrial character of our people which debar them from successful competition with other countries."

Though the causes of malady are manifold, the remedy is comparatively simple: to improve the industrial character of the people. Means of effecting this improvement are afforded by the Department of Agriculture and Technical Education, of which Sir Horace Plunkett is the originator and president. As the scope and functions of this Department have already been described in the ECONOMIC JOURNAL, both by the Chief himself and by his able lieutenant, Father Finlay (ECONOMIC JOURNAL, Vol. VI. p. 205; Vol. VII. p. 131), we need not repeat what has been so well expressed. Suffice it to say that the statistics of continued progress are brought up to date in the work before us. Attention may also be called to the lively picture of the matters with which the Department has to deal, in particular the applications for assistance which pour in upon the Chief—"himself" in the racy vernacular. A stockowner from a remote district telegraphs, "My pigs are all spotted. What shall I do?" Another writes, "Al the pigs about here is dying in showers. Send down a Vit at oncet." We have not space to reproduce the interviews with typical callers—the man who has invented a method of utilising bogs, and the man who wants his daughter to be trained as a poultry instructress.

Hearing how much is done by the Department, the economist, indoctrinated with the principle of *laissez-faire*, may be seized with apprehension. But on examination he will find that the danger of doing too much has been anticipated by the Chief of the Department—that he has carefully considered what Burke calls "one of the finest problems in legislation," to determine what the State should do for the people and what it should let

the people do for themselves. Other parties too, besides the economist, who may at first have feared for their favourite cause or peculiar tenet, will find that the author's frank criticisms are directed to the improvement of industrial character, without bias in favour of Orangemen against Catholics or Unionists against Nationalists. Trojan and Tyrian have seldom been treated so "indifferently." To the even-handed criticism which has been bestowed all-round on Irish institutions it has been archly suggested that there is one exception—"The Department." To us it appears that a little parental partiality towards a successful creation is natural and venial, and not much calculated to impair the general worth of our author's judgments. If we are right in ascribing a peculiar value to these judgments as being based on a large practical experience and expressed with unique fearlessness, they cannot fail to be highly prized by such as are disengaged from party contests. In that class we may include Posterity; who will perhaps find in these pages a picture of Irish conditions as instructive, if not as artistic, as that which is presented in Berkeley's *Querist*. If our author's words prove as effectual as his work, and the effect of both is as permanent as it is beneficial, he will deserve the prophetic encomium which was bestowed upon him in a recent debate by the Chief Secretary for Ireland: the name of Horace Plunkett will be remembered, "enshrined in History with the names of Arthur Young and Thomas Drummond."

The Theory of Loan Credit in Relation to Corporation Economics. By J. PEASE NORTON. (American Economic Association. 1903. Pp. 56.)

MR. NORTON is favourably known to students of abstract economics by his brilliant attempt to apply the higher theory of probabilities to the phenomena of the money market. The very competent reviewer of that essay in the ECONOMIC JOURNAL (1902, p. 518) was justified in expressing a wish for "more such studies." This wish is now fulfilled by Mr. Norton's method of representing the distinction—one of degree rather than kind—between the fixed and running expenses of a business. "The correct statement is that expenses may be ranged along a frequency distribution according to the ratio which they vary with output. The vertical scale [the ordinate] in the above figure [a curve of a kind familiar to the student of probabilities] represents amount of expense, and the horizontal axis [the abscissa] the form-rate at which expense

varies with output." The average value for the upper half of this frequency curve is taken to represent fixed expenses; the average for the lower half, running expenses. Upon this construction it may be remarked that the rate at which each kind of expense varies with output does not present a quite clear idea, in the absence of explanations which the author has not vouchsafed. Does not this rate depend on the magnitude assigned to the output? For a very small—a differential—output the rate is presumably zero with respect to expenses other than prime cost in the narrowest sense of that term. If finite differences of output are to be considered, there must be contemplated a rearrangement of the factors of production; and accordingly the rate in question will depend on the magnitude of the increment to the output. We may likewise complain of enigmatic brevity in the explanation of the scheme which is designed to represent the probability that the earnings of a concern will be large enough to assure a certain rate of interest for loaned capital.

These constructions subserve the purpose of throwing light on the business of companies. The mathematical student is assisted in one of his most difficult and important tasks: to obtain a neat but adequate formula for profits as dependent on incomings and outgoings, a clear and appropriate conception of the principles on which a manager or entrepreneur acts in fixing those economic variables of which he has the control. Among such variables our author gives a prominent place to prices. "The principles underlying railroad rates so clearly worked out by President Hadley underlie the price policy of modern business in general." Perhaps the writer applies the term "monopoly" too unreservedly to any business in which the manager has some power of varying prices. To take our own illustration (*cp.* ECONOMIC JOURNAL, 1897, p. 235), hotel-keepers in the same neighbourhood may be free each to fix his own charge for wine, candles, and so on, and yet they may be subject to what Cairnes called *industrial* competition, in so far as the net advantages offered to customers cannot be very different for the same total charge. We are not convinced that transactions should be described as "non-competitive" because "the consumer cannot detect differences of 60 to 100 per cent.," as Mr. Norton shows reason for believing. For, suppose this to be true of wine in the instance just given: a hotel-keeper would then be tempted to serve the same wine at different prices under different labels; and the scale of charges might vary according to the honesty and discretion of different managers. And yet, as it appears to us, the

industry is not on that account to be described as non-competitive. It is rather a sweeping assertion that "there never was a competitive price fixed by theoretical supply and demand curves, except in the case of a few staples capable of being graded." Even where this statement is literally true, may not the play of competitive forces, whereof supply and demand curves are the outcome or expression, still subsist in its essential character—for instance, in the labour market, and in transactions respecting house accommodation? (*Cp.* Marshall's *Principles of Economics*, Vol. VI. ch. ii. § 2, *note* 3.) In short, the author may seem to exaggerate the element of monopoly in modern business. But no doubt it is a very important element, and he has done well in formulating its action more clearly.

Istituzioni di Economia Politica. By Professor A. GRAZIANI. (Turin: Bocca, 1904. Pp. 718.)

THE work before us, equally with the financial "Institutions" which were reviewed some years ago in the ECONOMIC JOURNAL (1897), p. 402), commands our admiration as a sound and solid body of economic doctrine. A particularly agreeable feature is formed by the frequency of allusion to economic literature. From the space occupied in the index by references to J. S. Mill we have calculated that Mill is cited more than ninety times by our author. Professor Loria is cited more than a hundred times. It should be added that the references to economic literature are not only abundant but *recherché.*

This general encomium does not preclude our dissenting from the author on a particular point, the very point which obliged us to qualify our approbation of his earlier work. Professor Graziani still adheres to the declaration that a specific tax on a monopolised article does not necessarily, in general, tend to raise the price of the article; "it may be the interest of the monopolist either to raise the price or to maintain the original price." This thesis having been disputed in the review of 1897, Professor Graziani defended himself with spirit in a *brochure* entitled, *Sulla Ripercussione delle Imposte nei Casi di Monopolio* (*a proposito de alcune osservazioni del Prof. Edgeworth*). This rejoinder provoked a reply—in legal phrase a "surrejoinder"—in the ECONOMIC JOURNAL for 1898. Professor Graziani now follows with a "rebutter." But the reader must not expect from us a "surrebutter." Even at an earlier stage we had observed that economic controversy is a thankless task, because you cannot hope

to make any impression on your opponent, and yet he is the only reader on whose interest you can count. These reasons for keeping silent have not become less cogent with the prolongation of the controversy. Besides, in declining to reply now, we do not leave the last word to the antagonist. For in his latest utterance he repeats, word for word, the arguments which we had already quoted and replied to in the "surrejoinder" of 1898 (ECONOMIC JOURNAL, Vol. VIII. p. 234). The few who may be interested in this abstract question are asked to take the trouble of referring to that reply. It will be observed that a certain loophole for evasion was left by the affirmation of the conclusion as true in general and except in peculiar cases.[1] It is assumed that the curve representing net produce is, in general, of what may be called an ordinary kind; that the point at which the maximum occurs is not what the mathematicians call "singular." Suppose the locus to consist of two right lines intersecting in a point which corresponds to the greatest ordinate. In this case it very possibly "may be for the interest of the monopolist either to raise the price or to maintain the original price" when a tax is imposed. The controversy thus seems narrowed to this question: Is it to be taken for granted that the locus representing an economic quantity, such as the net profits of a monopoly, does in general form a continuous curve? If the question is construed strictly, the answer must be in the negative. Looked at through a microscope, an economic curve will show as a *polygon*, as pointed out by Messrs. Auspitz and Lieben (*Theorie der Preises*, p. 124). If it were possible to tabulate the amounts of net produce corresponding to different amounts of produce, the locus representing these observations would be a discontinuous set of points. But if the locus is discontinuous, it will be the interest of the monopolist to maintain the original price when a specific tax is imposed, provided that the tax is sufficiently small. The reader who considers the illustration given in our former paper,[2] substituting a polygon for a curve, will at once see the truth and insignificance of this proposition. Professor Graziani is formally correct in saying (*Istituzioni*, p. 235, par. 1) that when the tax is very small, then the probability is greatest that it will be the interest of the monopolist to maintain the price. So far as this incident depends on the *roughness* of the curve, we, of course,

[1] "In general and excepting the peculiar cases in which the second differential (as well as the first) vanishes at the point of maximum or becomes infinite."—Note 2, p. 235, ECONOMIC JOURNAL, 1898.

[2] ECONOMIC JOURNAL, Vol. VIII. p. 236. Cp. *ibid.*, Vol. IX. p. 307.

admit it, under the head of "friction." *De minimis . . . cadit quæstio.* With reference to a tax of sensible magnitude, the question may be thus stated. If a freehand curve-line were drawn through or among *several* of the points which correspond to different amounts of net profit, is it, in general, likely that the point on this curve, for which the ordinate is a maximum, is a "singular" point? May we commonly expect a *gabel* instead of an arch? Our postulate,[1] that a negative answer must be given to this question, will probably be regarded by Professor Graziani as "arbitrary" (*loc. cit.*, p. 235, par. 2). But we submit that this is one of the postulates with respect to the form of a "function," employed in abstract reasoning, which are justified by a sort of common sense founded on wide experience.[2]

Vergeltungzölle. By Professor H. DIETZEL (*herausgegeben von der Volkwirtschaftseben Gesellschaft in Berlin*). (Berlin: L. Simon. 1904. Pp. 60. 1 mark.)

RETALIATION, according to Professor Dietzel, is a generic term, divided into two species, retorsion, which is positive and militant, and reciprocity, which proceeds more slowly by the peaceful method of negotiation. The species have many properties in common. The conditions of success are much the same for both. The supply on the part of the foreign country must be inelastic; the demand on the part of the retaliating country, not so. These conditions are well illustrated by the case of a tariff war between Russia and Germany. The demand in Germany for Russian rye, the hunger of the German weavers for Russian flax, is about as urgent as the eagerness of the Russian agriculturist to dispose of his produce; at least, for short periods. If we consider longer periods, rye would probably be obtained from Germany from new sources, in particular by an increased cultivation of the cereal in Germany itself. This latter circumstance, it is remarked, would create an interest adverse to the restoration of Free Trade. Even Ricardo did not propose the sudden removal of agricultural Protection after the peace. This sort of adverse interest is even more likely to grow up, under the more prolonged action of reciprocity. Dealing with this part of his subject Professor Dietzel examines taxes on foodstuffs, on articles of luxury, on materials, and machinery; showing that in every case, in order to wound the enemy, we must hurt our-

[1] *Cp.* ECONOMIC JOURNAL, Vol. IX. p. 307, par. 2.
[2] See Index, *Probability.*

selves. The loss is certain; the gain problematic. It is not, however, inconceivable; Retaliation is not—though it is very likely to become—mere Protection. Prince-Smith and the "unconditional Free Traders on the other side of the Channel" have exaggerated the case against Retaliation. Enlightened by Adam Smith's impartial *dicta*, Professor Dietzel shows reason to believe that Caprivi in the commercial negotiation of 1891–2 played the part of that "wily animal, the statesman," with some success. The conjuncture was favourable. The policy of Germany was clear; her way of negotiating conciliatory. All these favourable conditions are wanting to the recent negotiations from which Professor Dietzel bodes no good results. Bullying and preparation for tariff war [*Rüstung*] cannot be practised by one nation without others following. The fact that Professor Dietzel writes for Germans about German policy gives weight to his disinterested opinions about Mr. Balfour's policy, which he thinks may easily lead Great Britain into the inextricable net of Protection. She will thus lose the economic advantage over other nations, which she has hitherto obtained through her Free Trade. It is possible, says our author, that England has already passed the zenith of her economic career, though he himself is of opinion that the "decadence of England" is now almost as untrue as in 1850, when it was affirmed by Ledru-Rollin. It is certain that the downward movement will become more sharply accentuated—that England's power of competing in the world-market will decline even quicker—if she has to pay for the policy of Retaliation by a permanent protective tariff (*Fall es die Politik der Busse mit dauernden Schutzzoll büsste*).

The History of the English Corn Laws. By Professor J. S. NICHOLSON. (London: Swan Sonnenschein, 1904. Pp. 188.)

HISTORIANS are wont to disparage abstract economics, while they claim for their own special studies the merit of showing the variability of conditions which are presupposed in the deductive method. But the work before us is a proof that the severer intellectual virtues are compatible with the historian's subtle power of entering into the past, and thence deriving lessons for the present. The author places himself in the position of the primitive Protectionists, and enters into their motives. There was a difference in their position compared with ours with respect to protective legislation; it had not been tried and found wanting. They sought according to their lights the interests of the con-

sumer and producer and of public policy. The idea at the root of the assizes of bread, and of other measures which formed with the Corn Laws a connected system, was originally reasonable.

The more sympathetic our author's appreciation of the motives, the more damaging is his judgment of the measures. This judgment, we may remark, is based on specific experience; it could not have been obtained *a priori* from the simpler principles of human nature; it is a teaching of history, though it is sometimes missed by historical specialists. "It was proved by experience that the protection of the consumer defeated its own object." "In most cases the promotion of various social ideals by the simple method of manipulation of taxes has proved a failure." "The history of the Corn Laws strongly supports the negative argument for Free Trade." "When all the rhetoric of exaggeration has been stripped away, and governments and landlords are cleared of iniquity in intention, the record is one of failure in accomplishment."

Professor Nicholson strips away "the rhetoric of exaggeration" with laudable candour. "The history of the Corn Laws," he says, "has been much perverted, and its actual evils have been much exaggerated." "The effects of the duties on the employment and wages of agricultural labour have been much exaggerated by the supporters of the Corn Laws." The greatest rise in the price of corn, at the beginning of the nineteenth century, occurred when the operation of the Corn Laws was least. The actual benefit to the landlords under protective system was not great. The defenders of Free Trade can afford to throw away rhetorical exaggerations, like the beleaguered garrison who, out of the abundance of their store, threw out loaves to the defied enemy.

We could not better express both our admiration for the defence of Free Trade made by Professor Nicholson, and our contempt for the opposite cause, than by supplementing his concessions and, as it were, throwing out one more loaf. We refer to the argument in favour of Free Trade that it would reduce the fluctuation, as well as the magnitude, of the price. Professor Nicholson has very properly attached weight to the former consideration, therein agreeing with Grote and Tooke and the other temperate opponents of the Corn Laws. Their reasoning is not proved wrong because it was not immediately verified. Greater stability was imparted to the conditions by the abolition of the Corn Laws, though, as it happened, the improvement did not make itself felt for some years. We have compared a period of twenty-four years before the abolition, viz. 1821–44 inclusive, with a period of twenty-four years after the abolition had come

into effect, viz. 1850–73 inclusive, in respect of instability as tested by the mean deviation of the yearly price (per quarter) from the average of each period respectively; and we find that, while this measure of fluctuation was for the earlier period 6*s.* 8*d.*, it was for the later period 8*s.* 8*d.* Again, taking periods of thirteen years, the first selected so as to cover the sliding-scale, viz., 1829–41 inclusive, the second period 1851–63, we find the mean deviation, similarly tested, to be 7*s.* 10*d.* for the earlier period, but for the later period 9*s.* 1*d.* It is a nice question, indeed, what is the proper measure of the fluctuation considered as a detriment to consumer or producer? It is tenable that the variation from month to month within a year—rather than from year to year within a period—constitutes the best measure. We have taken the monthly deviation thus for each of six years of the sliding-scale period, viz. 1836–1841 inclusive, and likewise the like deviations for each of the six years after the repeal, viz. 1851–6 inclusive; and we find 20*s.* 2*d.* for the earlier period, for the latter 25*s.* 1*d.* Again, looking at the variation in price from week to week we observe that the maximum difference between weekly averages is, for the period 1829–41, less than for the period 1851–63.

It seems indubitable that the greater stability of price which the abolition of the Corn Laws tended to effect was not immediately verified. Doubtless, as Professor Nicholson observes, "after all the main cause of fluctuations was the course of the seasons." When that cause was counteracted by the opening up of wider areas, with independent vicissitudes of harvests, then the wisdom of the old Free Traders was more conspicuously justified. The oscillation of price in the period 1886–98, as tested by the methods above adopted, is found to be only half what it was before the repeal. We may apply to the fluctuation of prices the test which Professor Nicholson applies to the prices themselves. "If the old scale of duties had been retained and enforced . . . then no doubt the range of corn prices [and of their fluctuation] would have been much higher."

To consider what would have happened if the old system had been retained down to our time is a fair way of testing the arguments of the old Protectionists. Referring to the argument based on national independence our author well observes: "the increase of wealth would mean the increase of naval power, and naval power was a better means of defence than self-sufficiency in corn-growing." If the old Protectionists had succeeded in their contention that the country should be in the main dependent on its own food supply there would now, indeed, be a little England.

A Geometrical Political Economy. Being an Elementary Treatise on the method of Explaining Some of the Theories of Pure Economic Science by Means of Diagrams. By H. CUNYNGHAME. (Oxford: Clarendon Press. Pp. 128.) 1905.

As ancient teachers used to incite their pupils to the study of the elements by the offer of cakes, so Mr. Cunynghame makes his elementary treatise attractive by the elegance and sprightliness of his exposition. Wit is made the handmaid of science. The happy use of metaphor contributes to the effect, as in the following passage :—

"Two manufacturing rivals are like men pulling against one another on a rope, one on each side of the summit of a hill. When one of them is once pulled over the summit the other can run away with him. But if the men were pulling on each side of a hollow, as in rival production of the agricultural order, then when one got pulled down a little his opponent's task would become harder; so they would come at last like a marble in a bowl to a position of equilibrium" (p. 89).

A feature that is likely to be very attractive to beginners is the author's practice of using examples taken from real life; for instance, the cost per ton of coal diminishing as the total output increases, in a "recently opened mine in Yorkshire," computed by the manager himself (p. 71), or the similar schedule for the cost of producing a crown 8vo book, obtained from a "leading publisher" (p. 55). While thus showing a grasp of concrete fact, our author does not ignore the abstract character of geometrical political economy. He warns the student that "diagrams cannot decide the question of Free Trade against Protection." We cannot forbear from quoting what he says *obiter* on that question with his usual force and brevity :—

"Perhaps the real truth is that Protection is a medicine, and that before giving it you ought first to find out whether the patient is ill; next whether the proposed drug will make him better; and thirdly how much you are going to administer" (p. 102).

It is given to few to unite like Mr. Cunynghame the powers of popular exposition and scientific investigation. Apparently it is not given even to him to apply both powers at the same point. We had hoped that the path struck out by him in his original article on "Exchange Value" in an early number of the ECONOMIC JOURNAL (1892) would have been now converted by him into a high-road accessible to the wayfarers of science, even though not specialists. But this hope has not been fully gratified. There

still, as it appears to us, remains some difficulty, which we shall endeavour to smooth over by a free restatement.

Let us begin with the theory of Demand. And first let the article demanded be of a species pointed out by Mr. Cunynghame, such that the utility to each purchaser derived from a certain quantity of the article would be less the greater the amount purchased by others. "Orchids" is the happy instance given in the work before us. If orchids became common, we must suppose the demand-curve which pertains to any individual to be altered in such wise that at some or all prices the individual demands fewer orchids. It might seem sufficient, considering two epochs at which orchids were respectively rare and common, to regard the dispositions of the parties as having suffered a change in the interval. There would be a new "collocation" of causes, in the language of Mill's *Logic*. But Mr. Cunynghame is not satisfied with this merely historical account of the change. He demands, as we understand, that the new collocation should itself be explicable by conditions which are pre-existent and co-existent in much the same sense as the dispositions represented by the ordinary demand curve. It is thus that we interpret his doctrine: "a group of successive curves is the expression of a state of facts existing at one time, and is not a group of successive time phenomena" (ECONOMIC JOURNAL, Vol. II. p. 39). We understand that there is here predicted the same sort of permanence as that which belongs to the state of facts designated by an individual's demand for a commodity, say tea: the law of demand does not change when the price changes. As our author well puts it:—

"Demand in its true meaning of the general group of amounts he was prepared to give for tea, each amount being dependent on getting it at a certain price has not changed" (p. 51).

But while we are quite prepared to find the sort of co-existence which we understand Mr. Cunynghame to postulate between the two states of an individual's demand for orchids, pertaining respectively to a period of rarity or abundance—to the scale, small or large, on which those exotics are used by society—still, as orchids cannot be at once rare and abundant, we see no objection to designating the state of demand by the attribute "short periods" (or perhaps "different periods"). Mr. Cunynghame, however, objects strenuously to this nomenclature (Preface and p. 73); with what justice we can better judge after considering his system as a whole.

We should piece the parts together as follows. Let us begin

with an individual's demand for anything, as generally conceived, as described, for instance, by Professor Marshall (*Principles of Economics*, Book III. ch. iii. § 4). The amount of the commodity which he demands (efficiently) depends upon the price. To this received conception we are now to add that the amount of a commodity like orchids demanded by the individual depends, not only on the price, but also on the amount purchased by others. There may be some little difficulty about the last phrase. Perhaps the amount purchased habitually on an average by the group of purchasers who are in competition with the individual would be an appropriate description. Passing over minor difficulties—for instance, as to the extent of purchases which the average is to cover—let us designate this new quantity, on which, as well as on price, the individual demand depends, as the scale of total consumption. Now let us put together these "individual demand curves," as we shall call them. We thus obtain "the sum of the demands of all the individuals" (Marshall, *loc. cit.*, § 5); dependent, not only on the price, but on the scale of total consumption. There may be some difficulty about this summation on the ground that the scale which effects the demand of each individual is not the same for all, each being affected by the others. But this difficulty disappears if we suppose, as we must suppose in a regime of competition, that the amount purchasable by each is negligible in comparison with the amount purchased by all.

The result of summing the particular demand curves is represented by Mr. Cunynghame—according to our interpretation—by a "successive utility curve" (ECONOMIC JOURNAL, *loc. cit.*). The transition to what he calls "the demand curve" is most easily expressed by mathematical language. Let x be the sum of the individual demands. It is dependent on p, the price, and on the scale of general consumption, which we will call x'. Now drop the *dash*, treating the x on both sides of the equation as one and the same quantity, and you will have a relation between x and p which constitutes "the demand curve proper," as for the sake of distinction we shall designate what we understand Mr. Cunynghame to mean by "the demand curve." It is characterised by this property. Take any amount, x, of the commodity, and form the individual demand curves corresponding to the scale of total consumption, x. The price at which the sum of those particular demands will be x is represented by the ordinate of the demand curve proper, corresponding to the abscissa x.

The construction may be illustrated by supposing some simple

system of "successive utility" curve, *e.g.*, straight lines "negatively inclined" (*cp.* Marshall, *Principles*, p. 174, 4th ed.) (sloping downwards from left to right); as each individual demand curve, and therefore the compound called a "successive utility" curve, must be in general (*ibid.*). The line designating such a curve lies nearer the origin the greater the amount of the article of the "orchid" species, habitually on an average purchased by the whole group of competing purchasers at the period under consideration. The demand curve proper will then be a parabola negatively inclined to the axis of x (or rather to the part of it with which we are concerned, the positive part, on the right of the origin).

Next let the article belong to the same class as certain "hymn books" instanced by Mr. Cunynghame (ECONOMIC JOURNAL, *loc. cit.*, p. 39): such that the more extended use thereof by the society is accompanied with a more urgent demand on the part of each individual. If, as before, the "successive utility" curves are negatively inclined straight lines, they are now to be conceived as *further from* the origin the larger the scale of social consumption. The demand curve proper will be a parabola as before, but one that is not throughout negatively inclined to the (positive part of) axis x. A part of the demand curve will be positively inclined to (the positive part of) the axis x.[1]

[1] Let ξ_r be the amount demanded by a certain individual; and let the equation of his "individual demand curve" be

$$\xi_r = A_r - B_r p - C_r x'^2;$$

where p is the price, x' is the total purchased in some such sense as above indicated; A_r, B_r, C_r are positive coefficients (depending on the nature of the individual). Adding together the equations pertaining to each individual, we have the "successive utility" curve $x = A - Bp - Cx'^2$; if $x = \Sigma\xi_r$, $A = \Sigma a_r$, and so on, the summation extending over all the individuals with which we are concerned. Now, treating x', no longer as a constant, but as a variable identical with x, we obtain for the demand curve (proper)

$$Bp = A - x - Cx^2,$$

representing a parabola of which the vertex is at the point $x = -\frac{1}{2}/C$; $p = (A + \frac{1}{4}/C)/B$. The right arm passes through the space enclosed by the axes $+x$ and $+p$, $\frac{dp}{dx}$ being negative throughout that space.

Next let the C_rs, and accordingly C, be negative. As before, we obtain for the demand curve proper a parabola. But the vertex is now on the right of the axis p; the arms stretch upwards; and there will always be a part at least of one of them (the one on the right) for which $\frac{dp}{dx}$ is $+$, while p and x are $+$.

These conclusions may be generalised by putting for the equation to a "successive cost curve"

$$x = \Sigma f_r(p,x') = F(p,x').$$

If the function f_r is such that not only $\frac{d}{dp}f_r$ is throughout negative, but also

We must confess that this elaboration of the theory of demand appears to us chiefly important as an introduction to the more difficult theory of supply. Corresponding to the three kinds of curve above described, we have now (1) "individual supply" curves, each connecting the amount which any individual producer is willing to supply with the price and the scale of total production; (2) "successive cost curves" (Cunynghame, ECONOMIC JOURNAL, *loc cit.*), formed by putting together curves of the first kind; (3) the supply curve proper. In a regime of competition it must be supposed that the particular supply curves are positively inclined to the axis x. For there must be some impediment preventing an individual producer from cutting out all his competitors by producing more and more at an ever cheaper rate. "The necessity of carriage from one place to another is an obstacle. The impossibility of suddenly creating the necessary skill is another" (Cunynghame, *Geom. Pol. Econ.*, p. 90, and *cp.* Marshall, *Principles*, 4th ed., Book IV., ch. xi. § 5, p. 365; p. 522, par. 4). If in a certain industrial regime we ascertained how much any individual would produce at a certain price up to the point at which it ceased to be his interest owing to some such impediment, and plotted a curve representing the amount of product corresponding to each price, that curve would be the individual supply curve (analogous to the individual demand curve). It cannot be a negatively inclined curve like that which represents the cost per ton of coal diminishing with the total output in a certain colliery to which Mr. Cunynghame refers (p. 71). For that curve is not, as it ought to be (analogously to the particular demand curve), the *locus* of the points at which the amount produced at any assigned price affords a *maximum* advantage to the producer. It is rather the locus of *zero* advantage; at any given price fixed by the outside market the firm would do well to increase its output. The statistics presented by Mr. Cunynghame in a graphical form may be described as constituting a *cost of production curve* for a particular coal-mine.

In a regime of monopoly, indeed, there need not be supposed impediments resulting in an upward curl of the individual supply curve. In fact, the conception of an individual supply curve,

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$\frac{d}{dx'}f_r$ for all the particular functions, then for the demand curve (proper), viz., $x = F(p,x), \frac{dp}{dx}\left(= \left(1 - \frac{dF}{dx}\right)\Big/\frac{dF}{dp}\right)$ is negative throughout. But if the conditions specified are not fulfilled, it may happen that $\frac{dp}{dx}$ is positive for a part, or even the whole, of the region with which we are concerned.

which represents the amount which a producer is just willing to offer at an assigned price, becomes insignificant in a regime of monopoly, a characteristic of the monopolist being his power to modify the price (*cp.* Marshall, *Principles*, Appendix, Note XIV.). We are concerned only with the cost of production curve, which may be either positively or negatively inclined.

The liability of an industry to be monopolised when it obeys the law of increasing returns creates peculiar difficulty in the application of the geometrical method to supply. In order that the theory which has been above set forth with reference to demand should be extended to supply, it must be postulated that the output of each producer is small in comparison with the collective output of all his competitors. But this postulate is apt not to be adequately fulfilled in modern manufacturing industry; as Mr. Cunynghame reminds us in many a striking passage (pp. 79, 86–89).

Keeping to the regime of competition we may illustrate the successive cost curves by parallel right lines positively inclined to the axis x. First let the height, or distance from the origin in an upward direction, of a successive cost curve be *greater* the larger the scale of total production (corresponding to the case of agriculture, if as the total produce is increased a higher price is required to evoke any assigned amount of produce from the individual cultivators). Then the supply curve proper will be a parabola positively inclined to (the positive part of) the axis x throughout.

Next let the height of a successive cost curve be *less* the larger the scale of production (corresponding to the case of some manufactures). Then the supply curve proper will be a parabola, with one branch negatively, and one positively inclined to the axis x.[1] Presumably in the latter case "external economies" are overridden by a tendency to diminishing returns. Under other conditions the supply curve proper might be horizontal. (*Cf.* Marshall, *Principles*, 4th ed., pp. 398, 522.)

The interpretation of Mr. Cunynghame's theory which we have offered in the preceding paragraphs fits fairly well. But it is not to be concealed that the original presents some dark sayings and unaccountable reticences which baffle the interpreter. The

[1] Put for the successive cost curves $x = A + Bp + Cx'^2$, where A and B are positive; and for the supply curve proper what this becomes when x' is substituted for x. When C is positive, $\frac{dp}{dx}$ is throughout positive, but when C is negative, this need not be the case. The conclusion may be generalised, as before in the case of Demand.

relation between the "successive utility" and the "individual demand" curves, such as we have conceived it, is not explicitly affirmed by the author. We have inferred the relation from his use of the "successive utility" curves to measure "consumer's surplus." It follows from that property that the successive utility curves must be made up of curves, or discontinuous loci (polygons), relating each to an individual, which have each, at least transiently or potentially, the character of a demand curve. "Short-period demand curves," we should have thought, would be an adequate description both of the "successive utility" curves and the individual loci of which they are made up. They are "demand" curves for the reason just indicated. They are "short-period" curves because when there occurs a change in the conditions of supply, and accordingly a new point of intersection between the new supply curve and the old "successive utility" curve, then—the correspondence between our x and x' being disturbed—the successive utility curve must be conceived as changing its form until x and x' once more coincide. No such change of form is suffered by the proper, or, as we should like to say, "long-period" demand curve. We should have said so if Mr. Cunynghame had not expressly repudiated this nomenclature.

The treatment of supply presents analogous difficulties to the interpreter, with others that are even more serious. Mr. Cunynghame described as a "supply curve" a diagram representing the cost of production of coal (p. 71) which appears to us, for reasons above stated, to be neither an individual supply curve, nor yet a supply-curve proper. Again, referring to the curve which represents the cost of production for successive editions of a book, Mr. Cunynghame speaks of a "line drawn horizontally through P" [the point corresponding to the first edition produced at a certain cost per book] as "the only supply curve that ever exists in the case of books that do not go to a second edition, and a very long-period supply curve many authors find it." Should not the case of these authors be relegated to the chapter on monopoly?

We trust that Mr. Cunynghame will prove his own interpreter in some future publication. We are sensible that it is a difficult and delicate matter to restate theories originated by another. Mr. Cunynghame himself sets the example of such adaptation when he attempts to translate into his own mathematical language Professor Marshall's celebrated foreign trade curves. The translation of a classic is seldom effected without the loss of some subtle quality which contributed to the excellence of the original. In the case before us it has been impossible to preserve in Mr. Cunynghame's representation the incident that

changes in international transactions are apt to be attended with changes in the general level of prices—the marginal utility of money—within a country. It may be urged, no doubt, that with regard to small changes in the large system of modern commerce (*cf.* Cunynghame, p. 120) the abstraction of this incident may be practised with safety. However this may be, for the purpose of education at least—since the exaggerated importance attached to money is the source of the principal fallacies which beset the subject—is it well to forgo the advantage of expressing the too easily forgotten truth that trade is, in Mill's phrase, " in substance and effect, barter " ?

There is more than meets the eye in Professor Marshall's foreign trade curves. As it has been said by one who used this sort of curve, a movement along a supply-and-demand curve of international trade should be considered as attended with rearrangements of internal trade; as the movement of the hand of a clock corresponds to considerable unseen movements of the machinery. Mr. Cunynghame has set himself to illustrate these internal movements by a complicated system of his own curves. The beauty and flexibility of the geometrical instrument are well exhibited by this feat. Mr. Cunynghame has shown marvellous skill in surmounting the characteristic limitation of the geometrical method : namely, that, in his own words, " it can at most deal with three variants." " When we get beyond this we want a fourth dimension and our imagery fails us."

Notwithstanding this candid admission, we are not satisfied that Mr. Cunynghame holds the balance evenly between the rival claims of geometry and analysis. As exemplifying the peculiar power of symbols there occurs to us Mr. Pigou's masterly investigation of the incidence of a differential tax on wheat imported from foreign countries into the United Kingdom (*Fortnightly Review*, January 1904). The subject-matter, an interdependent system of markets, foreign and domestic, is similar in kind to that which has afforded to Mr. Cunynghame his most brilliant triumphs of geometrical skill. But could even Mr. Cunynghame marshal in a plane, or even in space, all the variables which enter into this problem of *three* countries ?

Nor are we convinced by the following objection :—" To express an experimental supply curve, as, for instance, Fig. 27, or price of getting coal, Fig. 35, or of producing a book, Fig. 27, or still more the curves of demand for corn or sugar by such an expression as

$$y = f(x)$$

is to invest these curves with an apparently simple law-determined character that they do not really possess." But as all that is knowable—much more than is usually known—is a set of discrete data, so much commodity corresponding to such a price, whether is it more arbitrary to draw a freehand curve through points representing those data, or to use a form which stands for any one of an indefinite number of equations,[1] each representing a curve passing through the given points? Both the methods present the sort of difficulty which the student of Euclid has to jump when, for the purpose of proving some proposition relative to triangles, he draws a figure which unavoidably presents other attributes besides mere triangularity. As Berkely says, "it is true that the diagram I have in view includes all these particulars, but then there is not the least mention made of them in the proof of the proposition." It seems to us quite tenable that the indefinite symbol "*f*" obtrudes particularity even less than a concrete curve-line. But it is natural that one who has attained such distinguished success as Mr. Cunynghame in geometrical political economy should be partial to that method.

The Theory of Distribution. By Professor T. N. CARVER. (New York: Macmillan Co. London: Macmillan & Co. 1904. Pp. 287.)

PROFESSOR CARVER has not only shed new light upon his subject, but has also collected the rays from all other sources of illumination. Brilliant flashes from the latest literature, along with a dry light of classic origin, are reflected on his pages. The harmony between new and old expressions of truth commands belief. The work reads like a revised version of authorised doctrine. Many an old text which had almost lost its meaning overlaid with comment and controversy, now, as it were, retranslated from the original—not always very lucid—idiom, resumes the character of simplicity and truth. For example, the dictum that "rent does not enter into the cost of production," will nevermore, it may be expected after Professor Carver's explanation, perplex the inexpert. So the truth which Ricardo somewhat harshly expressed when he predicted the same sort of effect whether you "diminish the cost of production of hats," or "diminish the cost of subsistence of men"—the portion of truth

[1] In particular, a rational algebraical function $y = A_0 + A_1 x + A_2 x^2 + \ldots + A_m x''$; whether the constants are considered as numerous as the observations and so fitting them exactly, or less numerous, fitting the observations as well as possible.

in this analogy is restated with final precision by Professor Carver. Even so elementary a proposition as that which connects value and cost of production comes mended from his pen. Among other improved statements we may refer to that which defines the relation between production on a large scale and the maintenance of "a true equilibrium of demand and supply." Not all have perceived so clearly that there must be postulated a demand large enough to enable a considerable number of establishments to run at their full capacity. The definition of Profits, the conception of the entrepreneur's function, may be mentioned as another subject respecting which our author has cleared up controversy.

A work so complete does not offer much opening to critical comment. We may at least avoid the monotony of encomium by mentioning two points which appear to us debatable: (1) the author's definition of diminishing returns, in relation to economic equilibrium; (2) that "the law of marginal productivity can be applied to the earnings of business management as well as to the wages of other labour." On these points we could have wished that the author had been more explicit; but we do not feel disposed to be so ourselves at present.

The Present Position of the Doctrine of Free Trade. By FRANK W. TAUSSIG. (Reprinted from Proceedings of American Economic Association, 1904.)

PROFESSOR TAUSSIG'S Presidential Address to the American Economic Association is worthy of the occasion, the subject, and the man. He begins by remarking on the changed prospects of Free Trade since 1860. Country after country has joined the Protectionist ranks. Even Holland levies duties which are inconsistent with a strict adherence to Free Trade. Reviewing the arguments which are commonest in popular discussion, Professor Taussig says: "I confess to a sense of humiliation when our leading statesmen turn to reasoning easy of refutation by every youth who has had decent instruction in elementary economics." "The common talk about the sacredness of Protection as a means of lifting up the working man is mere claptrap." No doubt the maintenance of high wages in certain industries depends on Protection. "Free Traders do not squarely face the difficulties of a transition to their system."

Going on to more difficult matters, Professor Taussig considers together the arguments against dumping and those in favour of

protecting agricultural products against the competition of other countries. The objection to dumping turns on its temporary character. If it goes on indefinitely, where is the harm? A case in point is that of the bounties which caused continental sugar to be dumped on Great Britain. " It is in their probably temporary character that the sober economist finds justification for the policy that led to the abolition " of these bounties. There is tenable ground for arguing that Great Britain, in causing them to be stamped out, acted in the permanent interests of her own industrial organisation. By a parity of reasoning in the case of agriculture, if it were clear that the supply of cheap food from America would cease to be available in ten or twenty years, Europe might have good grounds for resisting this " invasion." But " to attempt to make provision for such an indefinite future is at the least very doubtful policy."

Turning to the argument for the protection of infant industries, Professor Taussig observes that it is less connected with theory than other parts of the controversy. The problem offers an especial field for the inductive and historical method. But experience, when consulted, gives an ambiguous answer. There is good ground for believing that the protective system in France during the first half of the nineteenth century had bad results. On the other hand, says Professor Taussig, " some researches of my own have led me to believe that on the whole the first growth of manufactures in this country, in the early years of the nineteenth century, was advantageously promoted by restrictions on competing imports." Some of these researches, we may remind the reader, are given in Professor Taussig's candid history of the American tariff. But if such Protection is not proved to be useless, it is certainly not indispensable. In the Southern States the cotton manufacture has grown up unprotected in the face of the established industry of New England. The growth of manufactures in the Central States under a regime of complete free trade is even more instructive.

In this connection the author records his impression that the effects of tariff legislation are commonly much exaggerated. There are so many other factors: in particular, the political position of a country, and even, we read with interest, martial success. As Professor Taussig in a remarkable passage explains: " No one is more opposed than I am to all that goes with war and militarism. It is with reluctance that I bring myself to admit that the same spirit which leads to success in war may also lead to success in the arts of peace; " for example, in the case of

Germany, "a spirit of conquest in all directions through the people, bred, or at least nurtured, by the great military conquest of the Franco-German War."

Notwithstanding—as some would say, but, as it appears to us, quite consistently with—all these admissions, Professor Taussig adheres firmly to the principle of Free Trade. He has no sympathy for the "pseudo-judicial attitude" of those who are for judging each particular case on its merits, without any presumption in favour of Free Trade rather than Protection. Such writers are justly suspected of "inability or unwillingness to follow the threads of intricate reasoning." This rejection of general principle is the less excusable in the case of international trade, as that theory has received and required little modification. "The edifice of which the foundation was laid by Adam Smith and his contemporaries, and which was further built up by Ricardo, senior, and the younger Mill, remains substantially as it was put together by these ancient worthies." . . . "That theory in its essentials holds its own without a serious rival." The application is doubtless not so easy and simple as was thought by the economists of half a century ago. But "the fundamental principle of Free Trade has been little shaken."

Henry Sidgwick: a Memoir. By A. S. and E. M. S. (London: Macmillan & Co. 1906. Pp. 633.)

HENRY SIDGWICK is remembered by economists as one who shed light upon their science not only directly, but also by reflection from other worlds of thought. In respect of this double service he may be compared with several of his predecessors in that illustrious line of English philosophy which he worthily continued. What he says of J. S. Mill as an economist is true of himself:—"He brought a higher degree of philosophical reflection to bear upon his exposition of the common doctrines of the science."

Among passages in the book before us which refer to Sidgwick's purely economic studies the following appears particularly interesting:—

"I have been reading all kinds of things lately. I find out that political economy is what I really enjoy as an intellectual exercise. It is just at the right stage of scientific progress and there are not too many facts to be got up."

We forbear to expatiate on the reflections which this confession

suggests—how much can be effected by " intellectual exercise " without " too many facts," in the way of clearing away the illusions which beset our subject; how little in the way of concrete constructions on the site thus cleared; whether many students can be expected to " get up " more facts than sufficed Sidgwick.

Sidgwick wielded the purely deductive organism with considerable power. But he especially excelled in handling what he called the " Art of Political Economy." This part of his economic treatise, the great Third Book, is much indebted to his ethical philosophy. From the Methods of Ethics is borrowed the dialectic by which it is concluded that the principle of Distributive Justice affords no certain sound, no clear direction, unless it is informed by the superior principle of Greatest Happiness. The Methods of Ethics are also required in order to interpret the utilitarian first principle: to exhibit the implication that the sum-total of happiness is increased by increasing the number of a prosperous population, and the *prima facie* presumption in favour of equally distributing the means of happiness—a presumption limited by laws of human nature very general and deep-seated. These sublime topics are not explicitly rehandled in the Memoir. But if we obtain no further guidance in the arduous region of first principles, still our confidence in the guide is increased. The life of the philosopher is calculated to add authority to his teaching. We do not profess to analyse philosophically the grounds of such authority. The reader may be referred to the paper printed in an appendix to the Memoir, in which Sidgwick has discussed Authority as a source of belief. Perhaps the sources of primary belief are described more justly than philosophers are ready to admit in the lines " which occurred to Sidgwick in sleep, or which at least he awoke thinking of," beginning, " We think so because other people all think so," and continuing, " or because we were told so and think we must think so." However that may be, it is safe to say that the perusal of this well-composed narrative and well-compiled correspondence will deepen in many minds their respect for the judgment of Sidgwick. Memoirs of great teachers or preachers sometimes counteract the effect of their writings, by the exhibition of pettiness in private life. But Sidgwick sustains our respect by a certain elevation of mind, the quality which he himself describes when, with reference to " reading and thinking," and " the ultimate good to be derived in indirect ways " from mental cultivation, he says (p. 143)—

" This world, our little petty interests, are ' too much with us,'

and anything that lifts us out of them is a gain. Indeed, I estimate men a good deal by their capacity for this elevation, 'soaring.'"

His friends and the readers of his life may say of him what he says of a lost friend :—

"I never knew any one more free from what Goethe calls 'was uns alle bändigt das Gemeine.' After conversing with him I always felt that the great realities of Life and Thought and Art, the true concerns of the human spirit, became more real and fresh and vivid to me."

Those whose study of Sidgwick is confined to his philosophical writings may fail to realise how deeply his thought was tinctured with the wisdom which is diffused through literature, how diligently he studied human nature in the school of those masters who, in the phrase of one of them, are better teachers of conduct than "Chrysippus and Crantor." Sidgwick's sympathetic interest in everything human extended even to the antiquities of economic history. We shall not attempt—it would be out of place here—to portray the varied talents and virtues which, known already to the readers and the friends of Sidgwick, awake new admiration as reproduced in this Memoir. But we have thought it not irrelevant to adduce some illustrations of the encomium which has already been pronounced in the ECONOMIC JOURNAL by the very competent judge who wrote the obituary notice of Sidgwick. In that appreciative study Mr. Keynes sums up his impressions by "saying that he regards Professor Sidgwick not merely as the most intellectually gifted man he has ever met, but also as pre-eminently realising Aristotle's conception of the φρόνιμος, the impersonation of the standard of reason." That Aristotelian character, it will be remembered, is the one of which it is written that we ought to defer even to the undemonstrated dicta and opinions of the wise, who have a power of mental vision acquired by experience.

A conspicuous feature in Sidgwick's philosophy was the blending of practical wisdom with speculative doubt. He who reduced so many provinces of conduct under the sovereignty of the Utilitarian first principle still hesitated to complete the unification. It appears from the Memoir that this speculative doubt was never removed. We are here not entirely unconcerned with this scruple about first principles, so far as the Art of Political Economy involves the postulate that

"The ultimate criterion of the actions of government generally is their tendency to increase human happiness" (Sidgwick, *Politics*, ch. iii. § 3).

But let it be granted that conduciveness to general happiness is the end of political action; that in choosing between alternative policies the main question before the political economist is, which "may be expected to lead to most happiness so far as this depends on the production and distribution of the produce of industry?" (*Political Economy*, Book III. ch. vii. § 1).

There still may be hesitation as to the means conducing to that end. For "we can no longer use the comparatively exact measurements of economic science, but only those more vague and uncertain balancings of different quantities with which the politician has to content himself" (*ibid.*, ch. i. § 1).

Again and again, as each practical problem comes up for consideration, Sidgwick insists on this limitation of our faculties:—

"There is, I think, no theoretical solution: it can only be settled by a rough practical compromise" (*ibid.*, ch. ii. § 2).

"It seems hardly possible to frame the regulations on any other principle than that of carefully balancing opposite expediencies" (*ibid.*, § 6).

Other philosophers formally admit, but are apt to forget in practice, that probability is the guide of life. To follow the better course and yet continue to see the indications which pointed in other directions was the peculiar virtue of Sidgwick. The editors' testimony as to this peculiarity—the testimony of a brother and a wife—deserves attention.

"He always had a vivid perception of the other side of a question, and was eager to take into account what was valid in an opponent's position, so that in practical affairs he generally acted consciously on a balance of advantages, not on any overpowering conviction that the course he adopted must certainly be right; there was no element of fanaticism in anything he did, and his temperament was not a sanguine one. The result was not indecisiveness in action. When he took up any matter—for instance, the education of women—he worked at it with a deliberate zeal and an unwavering, single-minded, self-devotion, which made up for lack of enthusiastic and unhesitating conviction; but he worked without the stimulus which this gives; and perhaps his balanced temperament prevented his being a very inspiring leader, except to those who knew him well."

Sidgwick's scepticism has more than once taken the form of refusing to submit to a general rule which purports to render the appeal to experience superfluous. Of this character is the limitation which he imposes on the principle of *laissez-faire*. Limitation we say advisedly, not abrogation, of the general principle, to which he still leaves considerable authority.

"This conception of the single force of self-interest, creating and keeping in true economic order the vast and complex fabric of social industry, is very fascinating. . . . And I believe that the conception contains a very large element of truth" (*Political Economy*, Bk. II. ch. ii. § 1).

So with respect to one particularly important infraction of *laissez-faire*, protection of native industry, we read :—

"I do not mean to say that the broad general argument for industrial liberty has lost its force. I have already expressed the contrary opinion, but I think that in the natural development of economic theory it has come to be recognised as merely a first approximation to the truth" (*Political Economy*, Bk. III. ch. v. § 1).

The main consideration which turned the balance in Sidgwick's judgment, making him "decidedly opposed" to the policy of Protection, is thus expressed :—

"I do not think we can reasonably expect our actual governments to be wise and strong enough to keep their protective interference within due limits" (*ibid.* We have not room for the corroborating context).

It may be asked now : Does Sidgwick hold the balance fairly between general and specific evidence when the two conflict? Some prejudice may perhaps be excited by his procedure in a case which is somewhat parallel, though in *aliâ materiâ*, his investigation of spiritualistic phenomena. He may seem ready to admit shreds of evidence in defiance of common sense. The Memoir certainly shows him pursuing "psychical research" more persistently than might have been expected; but it also shows that he was by no means deficient in what Gibbon, with reference to a well-attested marvel, calls a "general antidote" against credulity. Altogether, on the question, which does not admit of a precise answer, what comparative weight should be assigned to particular pieces of evidence and to experience massed in generalisations, it would be hard to show that Sidgwick deviated from the standard of reason. The refined argument that "temporary protection is in certain cases defensible in pure economic theory" (*loc. cit.*) is far removed from vulgar fallacies; a philosophical curiosity about telepathy and hypnotism does not imply belief in popular superstitions and the common ghost.

All that we learn about the personality of Sidgwick confirms our deference to his practical wisdom. A peculiar weight attaches to his judgments on the human side of economic problems. He teaches with authority that the Art of Political Economy aims at a maximum of happiness, by means in the choice of which

we have often to be content with a balance of probabilities. Whenever he himself strikes the balance he thereby contributes a datum of some moment to the deliberations of his followers. Great weight accrues to the scale which preponderates in the well-balanced mind of Sidgwick.

La Monnaie. By A. DE FOVILLE. (Paris: Lecoffre, 1907. Pp. 242.) *La Science Économique* (Troisième Édition, entièrement refondue). By YVES GUYOT. (Paris: Schleicher, 1907. Pp. 531.)

M. DE FOVILLE has a great advantage over most writers on this subject, in having a practical knowledge of it. He has studied Money as Director of the French Mint. The subject had indeed engaged his attention before his appointment to that office, in 1893. He had already computed the amount of money circulating in France by a method which was discussed in the ECONOMIC JOURNAL in 1892 (p. 168). It may be interesting to record here some of the results obtained by the latest application of that method. In 1903 the total value of the gold money in France (including foreign coins) was 4,800,000,000 francs; that of silver (at its "par," or nominal value) not so much as half this sum. Since 1903 additions have been made to the gold currency, but M. de Foville doubts whether it has been brought up to half the total amount of gold coin issued from the French Mint since the year 1795, a total of some 10,000,000,000 francs. We infer that the gold currency in France now amounts to about £200,000,000. Comparing this stock with that of other countries, M. de Foville accepts as "not improbable" the estimate of the American statisticians that the monetary stock of the world amounts to thirty-one milliards of gold and sixteen milliards of silver (say £1,240,000,000 and £640,000,000 respectively). The amount of gold—whether as money or in some other form—existing in the civilised world, he estimates at not more than forty milliards, that of silver at not more than thirty milliards. A useful summary of the monetary regulations prevailing in the different countries of the world is given in one of the descriptive chapters. We may also mention particularly the chapter in which the various operations by which an ingot is transformed into coins, are vividly, we had almost said visibly, set forth. In the description of monetary technicalities, M. de Foville has among economists only one rival, Jevons, who had been an official of the

Australian Mint. But Jevons's "Money," compared with M. de Foville's, has the disadvantage of age.

Practical acquaintance with details is not always accompanied by the art of communicating knowledge. But M. de Foville is a master of this literary art; as will be known to our readers from the specimens which we occasionally give of his contributions to *L'Économiste Français*. He seems to apply to economic writings the Horatian prescription for poems: *Non satis est pulchra esse . . . ; dulcia sunto.* Illustration and anecdote are happily employed to win attention to economic truths. For example (with reference to the laws of exchange and value):

"If at a raffle [*une tombola*] a little boy has won a doll and a little girl a gun, both will be dissatisfied [*deçus*]; but a simple exchange will suffice to change their disappointment to joy."

"When the King of Prussia reproached a celebrated ballet-dancer with getting higher pay than the Marshals of his army, 'Very well, Sire,' she replied, 'make your Marshals dance.'"

Such specimens suffer by being transplanted from their original context, and their native French. Otherwise we should have been tempted to cite some other passages, for instance, the one in which we are told "where the gold and silver go" (ch. xii.).

Among the objects which a popular treatise on Money should aim at, M. de Foville has properly included the refutation of sophisms. It is, indeed, a principal achievement of economic science in a region where first appearances are generally deceptive. As a *malleus hereticorum*, M. de Foville has a certain affinity to the compatriot with whom he is here bracketed. They agree in condemning the same classes; but they differ in their methods of trial. We shall illustrate this contrast by comparing the pronouncements of the two authors on some of the disputed questions in monetary science.

The "quantitative theory" of money is handled by M. Yves Guyot in such a manner as to leave us uncertain what effect on prices, in his judgment, might be expected if the quantity of gold in the world were to be now increased in the same proportion as after the discovery of America. He does not emphasise the truth which J. S. Mill had in view when he said (*Political Economy*, Book III. ch. viii. §. 2) that "the demand for money differs from the demand for other things . . . there is always a demand for as much money as can be got." M. Yves Guyot refers to Professor Marshall's observation on an influx of gold stimulating speculation. A careful study of Professor Marshall's evidence (Appendix to the Report of the Gold and Silver Commission,

1887, Q. 9629 *et seq.*) would show, we think, that the quantitative theory is not quite so otiose as M. Yves Guyot has conceived. The theory is judged more justly by M. de Foville.

" The influence exercised by the rarity or abundance of money on its value and consequently on the general level of prices is indubitable, as history shows."

" Prices depend indisputably on the quantity of money-matter that commodities put on the market [*mis en rente*] are confronted with [*rencontrent sur leur chemin*] ; and if the quantitative theory was limited to this statement we should have no objection, no reservation to formulate."

We have no objection to M. de Foville's careful statement of the theory. But we make a reservation in favour of the statement given by Mill, of which M. de Foville says :—" Stuart Mill himself went too far when he affirmed that the rise of prices is inevitable [*fatale*] whenever the quantity of money is increased." Stuart Mill may seem to say so in some passages, taken by themselves, but it will be found that they are accompanied with " qualifications " which, under a complete system of credit like that existing in England, render the proposition an extremely incorrect expression of the fact (*Political Economy*, Book. III. ch. viii. § 4). If he says that " the general state of prices cannot be corrected without the subtraction of actual money," he immediately adds, " or an annihilation of credit equivalent to it " (*ibid.*, ch. xx). § 3). Mill seems to us to differ from M. de Foville only in being less perspicuous.

Let us take another debatable subject, Index-Numbers. According to M. Yves Guyot, Mr. Bowley, in his *Elements of Statistics,* commits an error when he says, " It is required to find the value of gold when measured by the prices of other commodities " (Yves Guyot, p. 202 and p. 217; Bowley, p. 111). Mr. Sauerbeck, too, is blamed for having sought a common cause underlying the price-variations which he has ascertained. " Index-Numbers," says M. Yves Guyot, " can never comprise all the objects bought and sold " ; and the movements of all prices are not the same. What Mr. Bowley ought to have said is, " It is required to find the value of certain commodities measured by gold, according to the monetary standard [*d'après l'étalon monétaire*]." This is as much as to say that an astronomer ought to confine himself to measuring the change in the distance between the solar system and certain stars ; he must not attempt thence to infer the motion of the sun through a host of stars. A less remote illustration is afforded by an experiment which is recorded in a

former number of this Journal (Vol. XI. p. 413). A person walking down Piccadilly counted the number of omnibuses which met him, and the number which passed him; and from the comparison of these numbers deduced the fact of his own progress. For M. Yves Guyot, such observations—like the "yellow primrose" to Wordsworth's *Peter Bell*—are "nothing more" than particular measurements. Of course, common sense must be employed by one who makes inferences from such observations. If the vehicles had consisted of a funeral procession moving uniformly in one direction, and a train of ordnance wagons in the opposite direction, the movement of the pedestrian could not equally have been inferred. M. de Foville seems to have better caught the spirit of the method:—

"Prices have common causes of rise and fall . . . but there exist also for each of them special influences, and, in fact, far from seeing them all march together in the same direction and at the same rate like soldiers on parade, we see them performing evolutions [*évoluer*] as confusedly as the crowd in a street, some going up while others go down, some running while others stop and rest."

It is a deep remark that since the beginning of the world, the generations of men have had a sort of intuition of the current, sometimes progressive, sometimes retrograde, which prices, as a whole, obey, notwithstanding the influences special to each, "which allows us to speak of *prices* in the plural, and to lump them together [*solidariser*]." As to the construction of Index-Numbers, M. de Foville appears to take up Sir Robert Giffen's position; he has a theoretic preference for the weighted mean but is content with the common average.

"Others, forgetting that the better may become the enemy of the good, have preached geometric and harmonic means, medians, and Lord knows what [*que sais-je*]. Distrust these useless complications."

Is the median more complicated than the common average?

The arguments of the Bimetallists are led out for execution by M. Yves Guyot. But he hardly does justice to two of the chief arguments: the principle of independent variations—the "double reservoir" in the metaphor of Jevons—tending to stability of value, the contention that the rupture of the bimetallic tie in 1873 precipitated the value of silver which that tie had long maintained at a par with gold. Among the objections, which he says the Bimetallists have never answered, is the old one.

"If the *fiat* of Government [*le cachet de l'État*] is adequate to fix the value of money, why should not bimetallists ask for

equality between gold and silver instead of contenting themselves with the ratio $15\frac{1}{2}$ or 16 ? "

A complete answer has, we think, been given by Sidgwick (*Political Economy*, Book II. ch. v. § 6, 3rd ed.) and by Professor Nicholson (*Money*, p. 303, 5th ed.). Walker's metaphorical answer is perhaps sufficient. Two horses with somewhat different paces can be yoked so as to run together; but this does not prove the wisdom of that backwoodsman who, about to travel for the first time by train, thought to evade taking a ticket for his dôg by cunningly tying the animal to the back of the hindmost carriage. It may be that the fable of the dog better represents the facts of the case; that, as things have turned out, if silver had been tied to gold, it would not have been able to keep up with gold; but prior to experience, the argument based on the other possibility was not so absurd. On this matter M. de Foville shows himself as usual a severe, but not an unjust, judge.

"Certainly the written law is not omnipotent in monetary matters, and history proves this superabundantly; but we should also deceive ourselves by denying to law all influence on value, and history serves equally to prove this, since the ratio of $15\frac{1}{2}$ established by the French law between the value of gold and silver lasted more or less perfectly [*tant bien que mal*] for three-quarters of a century."

But this effect, he thinks, must always be precarious : the legal solder would not resist the shocks of circumstance.

The Austrian theory of value is distasteful to both the French writers. But it is remarkable that M. de Foville has adopted curves of supply and demand *à la* Cournot. His appreciation of this method—of what it does, and what it cannot do—appears fair enough; if we take into account that his limited subject did not lead him to consider the use of mathematical conceptions in enabling us to apprehend the complex mechanism of Distribution and Foreign Trade.

We have not obtained much help from M. Yves Guyot's definition of value :

"Value is the relation [*rapport*] of the utility possessed by an individual or a group of individuals to the wants and purchasing power of several other individuals."

His definition of Capital appears to us equally obscure. After enumerating the definitions given by his predecessors—Stuart Mill, Leroy-Beaulieu, and the rest—he concludes :

"All these Byzantine distinctions, all these confusions are swept away by [*disparaissent avec*] the following definition :

'*The word capital designates all the utilities performing economic functions*' [*faisant fonction économique*]."

It is fair to add that obscurity is not characteristic of M. Yves Guyot's style. In general he is delightfully clear and concise. The masses of facts by which he supports his arguments are presented with admirable lucidity. In his mastery of facts and figures, in his use of arguments effective against the cruder forms of the causes which he combats, he may be compared to the late Edward Atkinson of Boston. He might even be compared, as to method rather than style, with Bastiat, by those who adopt the verdict of Cairnes and other English economists as to the scientific character of the author of the *Harmonies*.

ΠΕΡΙ ΑΠΟΓΡΑΦΗΣ. Α. ΑΝΔΡΕΑΔΟΥ. (Athens: ΕΛΕΥΘΕΡΟΥΔΑΚΗΣ, 1908. Pp. 47.)

THIS is a lecture on the Census, given by Professor Andréadès, of the University of Athens. The Greek, which is his native tongue, imparts, by its classical associations, a certain piquancy to his valuable remarks on modern statists and statistics. The denizen of Western Europe will not immediately recognise, under the veil of a learned language, *τὸν Βλὼκ* or *τὸν Βερτιγιόν*. He will wonder what modern journal is mentioned by the designation *τοῦ Τάϊμς*. Not all the persons mentioned in connection with a census appear as much at home in Greek surroundings as Cecrops, King of Attica, to whom an old historian ascribes the first enumeration of the Athenian people. From an historical retrospect we pass on to the uses of the census, one of which is peculiar to modern times, to secure the distribution of voting power in proportion to population. The questions asked in the Greek census suggest some interesting remarks. The first demand, *Name*, does not render the second, *Sex*, superfluous. For in Greece there are many female names, Alexandra, Constantina, and the like, which differ little from the corresponding male forms, and the difference is apt to be disguised by the bad handwriting in which the returns are often made. The second question brings into view the curious circumstance that in Greece the men outnumber the women in the proportion 100 to 92, while in the rest of Europe the preponderance is the other way—1,026 women to 1,000 men. Professor Andréadès is disposed to accept the generalisation that Asiatic races have an excess of women,

European, of men. Thus in Japan there is a considerable excess of men; and in the East of Europe the excess of women is less than in the West. Greece perhaps owes her exceptional excess of men to the occupation of the Turks. If so, that occupation left behind it one good result, in the judgment of our author, which deserves to be quoted in full. "In order that women should marry easily men should be in excess. It is desirable that unmarried women should not become numerous, as in politics and social life they are far from being elements of concord and order. We Greeks have an unpleasant experience of this, in spite of the fact that our women are in the minority. The English have an even bitterer experience. The unmarried women of England, the number of whom amounts to about a million, form a peculiar class which has been called 'the third sex.' Lowering wages by their competition with the men, claiming political rights for women, and introducing a freedom of action which is far from favourable to domestic life, this class has become an element of which the disturbing effect is very marked." The views of Pericles respecting the sphere of woman seem to have been inherited by the distinguished modern Athenian. Going on to another head of the census, the "Civil State," as our statisticians say, Prof. Andréadès points out that inferences as to the character of a people from the number of marriages must be made with caution. In Greece, account must be taken of the excellent custom—literally "sacred tradition" —that brothers must see their sisters settled in life before they themselves marry. Prof. Andréadès concludes his striking and instructive address by combating the prejudices against the census, which seem to be as strong in Greece to-day as they once were in England. He reminds the devout of the memorable journey to Bethlehem that was undertaken in obedience to the requirements of the census; he warns the patriotic that deficiency in this branch of statistics is generally regarded as a mark of an imperfect civilisation.

Gold Prices and Wages under the Greenback Standard. By WESLEY C. MITCHELL. (University of California Publications in Economics.) (Berkeley: University Press, 1908. Pp. 627.)

THIS is a continuation of the author's *History of the Greenbacks;* or rather the materials for such a continuation, "the statistical apparatus of a book still to be written."

The statistical apparatus would be well worth studying for its own sake, even if the author had not pointed out its economic significance. In dealing with prices and wages he is not content with the comparison of arithmetic means; he employs largely *medians* and *deciles*. For example, for the prices of October, 1873, compared with 1860, there are *ninety-one* percentages: as thus, in the order of magnitude,

58, 76, 78 *bis*, 85, 86, 89, 91 *bis*, 92, . . . 241, 250, 367.

The deciles are points on this scale which divide the whole group of percentages into ten sub-groups, each comprising a number of percentages which is the tenth part of the total number, that is, 9, or rather 9·1. Thus the first decile is 92, since up to and exclusive of 92 there are nine entries—78 and 91 each occurring twice. Likewise the ninth decile is 196, since up to and exclusive of that entry there occur *eighty-one* percentages. The median is identical with the fifth decile. The graphical representation of this system consists of ten more or less parallel curves.

There can be no question as to the value of this statistical method. But before it is generally adopted its cost in labour should be counted. Is it worth all the trouble that it involves? Could nearly as valuable results be obtained with considerably less trouble? If for summary purposes an abridgment is desiderated, I suggest as a rough and ready rule the following. Find the second, fifth, and eighth decile; these determinations (with some attention to the highest and lowest figures that occur) will adequately characterise the group.[1] Thus for the prices of October, 1873, the data would be as follows:—

Lowest.	2nd decile.	Median.	8th decile.	Highest.
58	104	131	167	367

This presentation brings out the interesting circumstance that the distribution of the inflated prices is not symmetrical; the higher prices exceed the average much more than the lower prices

[1] The constants c and j pertaining to an asymmetrical curve of error (of the kind described by Mr. Bowley in the Appendix to the second edition of his Elements of Statistics) may be roughly calculated from the median together with two percentiles, as shown in the paper on the methods of representing statistics contributed by Mr. Bowley and the present writer to the *Journal of the Royal Statistical Society*, June 1902. A particularly simple construction is afforded by the 16th and 84th percentile (corresponding to the points R_1, R_2 mentioned by Mr. Bowley in the paper referred to) taken in connection with the median. But Mr. Mitchell's statistics are perhaps too violently asymmetrical to justify the use (for this purpose) of percentiles at such a distance from the central region.

fall short of it. The incident had been observed before, but not, I think, evidenced so fully as by Mr. Mitchell's statistics. For the period 1860 to 1880 the average difference between the second decile and the median is 25·6 (as appears from Mr. Mitchell's Table 5), while the average difference between the median and the eighth decile is 33. The differences between the higher and the lower parts of the scale are much greater.

There is a propriety in fixing attention upon the central portion of the statistical group. For that is the portion most amenable to general law. It is there that we may look for the fulfilment of the law of error—the asymmetrical law, which is a generalisation of the simpler law expounded by Mr. Galton. We may expect to find the law when we have reason to believe that there exist the conditions of its genesis—the sporadic action of independent agencies, a chaos of elements

"Confusedly in their pregnant causes mixed."

Now with regard to price-variations, Mr. Mitchell's statistics afford evidence of this fortuitous distribution. His Table 14, showing the numerical order of the percentages representing price-variations for some ninety commodities at the epoch of 1865 and 1879 respectively, shows in regard to the character of the commodities thus arranged the sort of disorder which is favourable to the application of Probabilities. "Unlike commodities are often side by side, and related commodities are often widely separated." In the period under observation forty-two commodities moved from the lower half of the table to the upper half, or the other way.

The statistics of wages do not, I think, afford such perfect data for the application of the more refined methods; principally for the reason which is thus indicated by Mr. Bowley. "In . . . wage groups we are not dealing with unconnected units; there is a tendency towards a standard wage in many occupations." [1] It is disconcerting to find in Mr. Mitchell's tables of wages coincident deciles; as to which Mr. Mitchell remarks :—"The fact that two or more of the deciles for an industry are frequently identical is due mainly to the fact that the series for an important occupation in a large establishment often represents more than a tenth of the whole number of employees in the industry as shown by the data" (p. 104). This lumping together of numerous statistics at one point appears to me to impair the method of percentiles, as applied to wages, more seriously than the opposite

[1] *Journal of the Statistical Society*, loc. cit.

characteristic—the absence of density—by which Mr. Mitchell is disquieted, even with reference to statistics of prices. "The median," he says, "is rather erratic within limits of several points, because its precise position is often dependent on the relative price of a single commodity, which stands in the middle of the scale of relative prices" (p. 58). The imperfection is due, as the writer intimates (p. 33, note), to the smallness of the group. He might have added that it is not entirely removed by the use of the arithmetic mean which he proposes to employ collaterally. The advantage of the arithmetic mean in respect of definiteness over the median is to a large extent only in appearance.[1]

I am looking at the matter from the point of view of Probabilities, each observation being regarded as representative of some coefficient that would be applicable to an ideally complete set of statistics. There are other points of view; there are diversities of problems, as Mr. Mitchell has pointed out, with respect to prices at least. With reference to one kind of problem it is proper to use price-variations not weighted according to the amounts, but rather selected according to the independence of each commodity, and not necessarily combined by way of the arithmetic mean. For another problem it is proper to weight the prices with corresponding quantities of commodity, and to combine the figures on the principle of the arithmetic mean, simple addition.

Of the latter description is the problem to determine the variation in the cost of living to the wage-earner, the change in the money-price of the set of articles (considered as constant) which he consumes. Mr. Mitchell's statistics throw much light upon this problem. Some of his results may be subsumed in the following generalisation. Let us define as "responsiveness" (to changes in monetary policy) a couple of attributes which are observed to go together, namely, the rise of index-numbers representing prices in paper-money from 1861 to 1864, and the fall thereof from 1864 to 1879. Then in the scale of responsiveness the following classes of prices prove to be in a descending order: (1) Prices of gold (in greenbacks); (2) wholesale prices of commodities; (3) retail prices; (4) cost of living; (5) wages. The paper price of gold rises higher and falls further than the wholesale prices of commodities, and much more than retail prices; the cost of the articles consumed by workmen fluctuates more violently than their wages (pp. 237, 273, 278, *et passim*).

This rough generalisation masks specific differences of great

[1] See Index, *Median*.

interest. For instance, it is found by Mr. Mitchell—contrary to a general belief, I think—that the responsiveness of the lower grades of wages is greater than of the higher grades. The paradox is explained by " the more severe pressure which the increased cost of living puts upon wage-earners with small incomes " (pp. 165, 186). The supply of common labour seems to show an elasticity now commonly supposed to exist only in the pages of Ricardo.

Mr. Mitchell points to other results of economic significance which it may be hoped he will develop in the future continuation of his *History of the Greenbacks*. He will thus obtain as high a rank in Economics as that which he has now attained in the twin science of Statistics.

The Meaning of Money. By Hartley Withers. (London: Smith and Elder. 1909. Pp. 307.)

Experts seldom avoid the sort of mistake which was committed by a distinguished astronomer when, lecturing to a popular audience about the distance of the stars, he continually employed without explanation the term " parallax." The distinguished astronomer could not put himself in the position of persons to whom that technical term was unintelligible. Unlike so many experts, Mr. Withers begins at the beginning. He can put himself in the position of those who have not yet lost through familiarity the sense of wonder which the modern monetary system is calculated to excite in the ingenuous mind. " At first sight there is something whimsical in the process of stimulating production and expanding trade by an agreement between two parties to owe one another something." The conditions under which this " magical business of providing currency and credit on a basis of mutual indebtedness " becomes possible is happily illustrated by the following metaphor. " Just as a man cycling through a crowded street depends for his life, not only on his own skill, but also on the care with which the rest of the traffic is driven, so the English banking system is dependent on the sanity and sense of the public as much as on its own soundness." Illustrations drawn from literature, as well as metaphors from common life, are employed with effect. The fictitious bill of exchange is illustrated by the " bill of asscolts " which Don Quixote, while wandering in the Sierra Morena, drew on his niece for three colts to be delivered to Sancho Panza " for the like number received of him here in tale." Still more remote

from the genuine bill of exchange representing produce is Mr. Micawber's order for a shilling on Mrs. Micawber, who—unlike Don Quixote's niece—was in process of being sold up.

Extreme lucidity is not often accompanied with modest doubt, as in our author's treatment of monetary science. For example, referring to the flow of gold to London, and thence to the United States during the crisis of 1907, he regards it as an "open question," "how much of the gold came because it was due to New York, and how much was drained out of other centres by London's masterful policy." In this connection he well observes: "In most economic questions these insoluble problems lie under the surfce, and it is because it is so easy to miss them and to ignore, and to be ignorant of, their presence that many people find it easy to be quaintly dogmatic about economic matters, which in fact become more and more complicated and obscure the more thoroughly they are understood." The doubt which the economist should feel may be compared with the hesitation often felt by the man of business—the state of mind graphically described in the case of a bill-broker who has to decide "whether to buy a parcel of three-months bills at 4 per cent. in the last week of June." As the various considerations affecting his decision are surveyed, "the vastness of the problem really begins to open itself out, and our broker, if of an imaginative turn of mind, may well fancy himself like a doubtful partisan standing on a hill-top and vainly trying to peer through thick mists with the aid of a somewhat inefficient spy-glass into a great plain in which a battle is being waged by a number of forces of shifting and incalculable strength, and knowing that his life depends on throwing in his lot with the winning side."

Both the precision of the writer's knowledge and his consciousness of its limitation appear to us marks of authority, disposing us to accept his practical recommendations. They are mainly two. (1) There should be established some connection between the official and the market rate of discount, some understanding between the Bank of England and the other banks with respect to the manufacture of credit. (2) Greater publicity of banking accounts is recommended. If it is too much to expect that all banks like the London and County Bank should give the amount of its daily average cash holding, at least a weekly statement seems desirable. These are the principal practicable suggestions. As a counsel of perfection it is proposed to increase the gold reserve by reducing the amount of the Bank of England's fiduciary note issue.

Free Trade in Being. By RUSSELL REA, M.P. (London: Macmillan & Co. 1908. Pp. 237.)

THIS is a collection of articles, letters, and lectures written or delivered at various times during the last five years on the subject of Free Trade and Protection. Two of the constituent pieces, together making up more than half the volume, have been already noticed in the ECONOMIC JOURNAL: *Insular Free Trade* in the number of September 1908, and in March 1909, *A Review of British Trade*, included in the report of the International Free Trade Congress. Among the remaining contributions, the Cobden Club lecture on *Shipping and Free Trade* (1905) deserves special notice. Mr. Russell Rea has here shown that—

"The mercantile navy of Great Britain alone, excluding the Colonies, shows a considerable preponderance over that of the rest of the world, if not in total tonnage, yet in value and in effective carrying power."

One mark of preponderant efficiency is the greater proportion of steamers—"almost in the proportion of three of steam to two of sail [for an aggregate of the principal countries in the world] against four of steam to one of sail in this country." That is, according to the statistics of 1902, the latest available at the date of the lecture. Since then, as appears from later statistics (referred to in an appended note), we have gained upon the world in respect of total tonnage, but lost—in that we advanced less—in respect of the proportion between steam and sail tonnage. In further proof of efficiency it is stated that of high grade steamers, defined by a speed of more than twelve knots per hour, the United Kingdom possessed (in 1902) more than four and a quarter million of tons, while the principal countries of the world together possessed little more than two and a quarter million of tons. We have the advantage, too, in the youthful age and up-to-date character of our ships.

It is cogently argued by Mr. Russell Rea that our preponderance at sea is connected with our Free Trade policy. At the time when we took the "Free Trade path to the right," America was advancing rapidly to the first position; and now her foreign shipping trade has declined almost to extinction. Mr. Russell Rea has arranged the principal countries of the world in two lists: (1) according to the severity of their Protective Tariff (as estimated in the Fiscal Blue Book); (2) in the inverse order of steam shipping tonnage per inhabitant. It is remarkable that

as the import tariff of a nation goes up, so does its register of shipping go down.

Such being our "superb supremacy," our "lonely pre-eminence," at sea, what are we to think of allegations purporting to prove that there is "rot at the foundations" of British shipping? Mr. Russell Rea's answer to this question is more than a contribution to the polemics of the hour; it is a study in the logic of statistics. Consider, for example, Mr. Chamberlain's assertion that—

"The tonnage of foreign shipping which entered and cleared from our ports during the years 1890 to 1900 had increased not only at a greater rate, but actually to a greater extent than the British tonnage. Between 1890 and 1900 the foreign tonnage using our ports had increased from 20 millions of tons to 35 millions, while the British tonnage had only increased from 54 millions to 62 millions" (p. 89).

It is not denied that the assertion was true at the time when it was made; though, as it happens, it has since then ceased to be true. But the fact, even when it existed, was capable of being in large part explained away.

"A considerable portion of the foreign increase in our ports is due to two items: first, the calls of the great German Atlantic steamers at Southampton, Plymouth, and Dover, at which ports they remain half an hour to embark or land a few passengers, and in no way touch the export and import trade of the country; and, second, to the existence of a small number of new Channel passenger steamers owned by the Continental railway companies, which enter our ports daily all the year round, and are counted scores of times in the course of the year" (p. 90).

Allowing for these items, we still find that the foreign tonnage using our ports increased disproportionately. But it is explained that—

"These foreign ships were being employed in the more local trades; that the inferior ships were, in fact, engaged in the inferior trades, and that the great long-distance ocean trades were chiefly in British hands" (p. 91).

There is still a residuum of fact which has not been explained away. It is explicable by the virtual discrimination in favour of foreign ships which is made by our light dues and Board of Trade regulations—a protection of the foreigner which the Free Trader is not concerned to defend.

Another contribution of special interest is the correspondence with Professor Pigou on the question, "Is it Possible to Tax the

Foreigner?" On this question Dr. Marshall's recently published memorandum has left little to say that is of much importance. But there is a peculiar interest in observing how a practical man of great sagacity deals with the refinements of academic theory.

Mr. Russell Rea accepts Professor Pigou's formula for the rise of price consequent on a differential tax on foreign wheat imported into the United Kingdom. But he does not accept the values assigned by Professor Pigou to the constants in this formula, in particular the *elasticities of supply* for foreign and for colonial wheat. Mr. Russell Rea will not accept the assumption that the extensibility, as Mill would say, of the colonial supply may be equated to the contractibility, if I may use the word, of the foreign supply.

As I understand, this presumption is of the kind which I have elsewhere described as *a priori* unverified probability; based not on specific experiment, but on general experience and common sense.[1] It is the kind of basis which underlies the presumption common in physics that a "function," or relation between interdependent variable quantities, may be treated in the absence of evidence to the contrary, as for the most part *continuous*; a presumption which is often legitimate in Economics. To take an example from the subject before us, on the strength of this kind of probability, I am disposed to question the suggestion that—

"A rise in the price of wheat would increase rather than decrease the consumption in this country. . . . The poor . . . would certainly . . . save on their small comforts—meat, eggs, butter, etc.—and actually use more of the dearer bread" (p. 126).

Even the milder statement that the elasticity of the demand for wheat *may* be positive, though I know it is countenanced by high authority, appears to me so contrary to *a priori* probability as to require very strong evidence.

"But this is a small point," as Mr. Russell Rea says. I admit that what is called *a priori* probability is not a satisfactory sort of knowledge. It is like the faint rays shed upon our world from the more distant parts of the universe, perceptible and useful only in the absence of the stronger nearer lights. Possibly Cournot is right when he restricts the office of the probabilities in question to the regulation of a bet. Doubtless it is inexpedient to bet unless you know more than such probabilities can teach. But governments, and still more the citizens, by whom they are elected, have often to act without more definite

[1] ECONOMIC JOURNAL, Vol. XVII. p. 227, and references there given.

knowledge. Of this kind are the presumptions which Professor Pigou has formulated with respect to the incidence of a differential import tax on foreign wheat. Vague as they are, these presumptions serve to show the plain man what to think of politicians who tell him that import duties will not raise prices. Probability is the guide of life; and the best estimate of probability which the ordinary citizen can obtain, without special opportunities of information, or a lifelong study, shows, in the instance proposed, that the probable advantage in the way of contribution from the foreigner is very small in comparison with the immense disadvantage attending the resort to Protection.

This practical outcome of the formulæ would be warmly accepted by Mr. Russell Rea. My contention against him is not *à l'outrance;* it is only a friendly gymnastic encounter such as may occur between soldiers in the same camp. Mr. Russell Rea attributes to the foreign supply of wheat an elasticity so nearly perfect that the foreigners' contribution to the tax would be "infinitely minute and totally invisible," and would continue to be so as long as any foreign wheat is required. In making this estimate he very properly relies on his own "commercial instinct." Those who have not the advantage of his experience in business can have no better evidence on the matter than the consensus of experts like Mr. Russell Rea. Still, I think, the judgment of a single expert—as it were a single observation, liable to personal equation "—is not decisive for the general public. I had as soon accept implicitly the instinctive judgment of a monometallist on the nice question whether the stability of gold prices in the long run of ages was greater than that of silver prices. In the absence of several witnesses or special knowledge of my own, I should do better to treat the two coefficients of fluctuation as for the purposes of the bimetallic controversy, likely to be equal.

Besides, I am not quite sure that Mr. Russell Rea brings his great authority to bear on the exact point at issue, as thus stated by Professor Pigou:—

"My argument has to do with ultimate effects only—that is to say, with the effects that follow after Preference has been in vogue several years and things have settled down" (p. 131).

Has not Mr. Russell Rea *short periods* in mind when he thus bears witness:—

"When the demand for tonnage and the rate of freights decline to a rate excluding all margin of profits, I lay up my least profitable ship at once. My elasticity in this case is instant.

On the other hand, when demand for tonnage is good and freights are high, it costs me both time and money to meet the demand by building a new ship. My elasticity in this case is slow and costly" (p. 125).

With reference to long periods, may we not apply to the increase of supply (in the colonies) as well as to the decrease of supply in foreign countries—consequent upon a differential tax on wheat—what Mr. Russell Rea says with reference to increase :—

"There is no article the supply of which can be modified more easily than corn. Botanically, wheat is an annual" ? (p. 116).

Altogether, I would rather take the chance of erring with Professor Pigou; though I dare say that Mr. Russell Rea may be right.

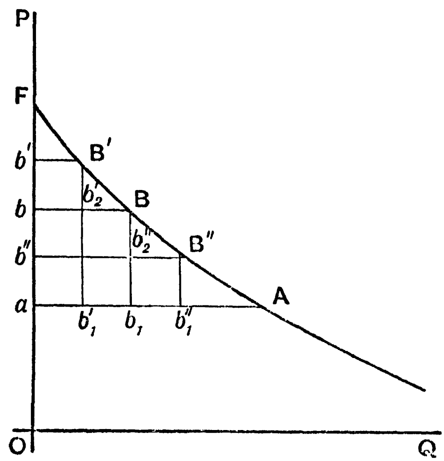
Cours d'Économie Politique professé à l'École Nationale des Ponts et Chaussées. Par C. COLSON. Livre Sixième : Les travaux publics et les transports. (Paris : Alcan. 1907. Pp. 527.)

THE sixth and last volume of M. Colson's Course may properly be made the object of a separate review. It is distinguished from the preceding volumes in that the greater part of their contents has appeared in earlier editions. Besides, it is not only the conclusion, but also the final cause of the whole work : "le but en quelque sort," says the author, "de tout le Cours." It is the crowning height to which the preceding parts lead up by a magnificent gradation. The reader must tread the greater part of this ascent by himself. We can only offer guidance at the first stage. The first volume calls for some notice here so far as it bears upon the volume that is under review.

A reader who, having some previous acquaintance with the economics of transportation but not with M. Colson's earlier volumes, should take up the last one might be surprised at the absence of reference to the literature of the subject. In particular he would desiderate grateful allusion to one of the author's predecessors in office and in studies connected with the *Ponts et Chaussées*, the illustrious Dupuit. This reticence is justified, or at least acknowledged, in the introduction to the whole Course, where the author, referring to the diversity of economic schools, says it has been his object to present the leading common features without entering into the details of quotation and reference. "I have refrained," he says, "almost entirely from bibliographical references, which fill so large a part of modern works; if they

are to be given with sufficient fulness and precision to be used for the purpose of indicating the part played by each earlier writer in the successive elaborations of a doctrine, it would be necessary to devote to references an amount of space which would have entirely exceeded the limits of this work."

Apropos of M. Colson's French predecessors, the English reader may like to be reminded that he employs Supply and Demand curves differing in one slight particular from those which Dr. Marshall has made familiar. The abscissa measured on the horizontal axis (usually designated by $O\,X$), represents, in the French system, the price, not the amount of commodity which



is offered or demanded at a price. Since the abscissa is by a general convention usually employed to represent the independent variable, the Cournot-Dupuit-Colson system may seem preferable, so far as the amount demanded or supplied depends upon the price. But when, as in the case of Dr. Marshall's "long-period" supply curves, the price (or range of prices during a short period) is considered as changing with the scale of production, there is a certain propriety in regarding the amount of produce as in some sort the independent variable. We have taken the liberty of turning one of M. Colson's diagrams through a right angle, so that the English reader may more readily apprehend the author's reasoning :—

One important argument relates to the case in which a monopolist, instead of charging a single price for a whole class of commodities, charges different prices for different species thereof.

"Let $O\ b$ be the single price which would bring to its maximum the gain of the monopolist, represented by the area $B\ b_1\ a\ b$ [$O\ a$ representing the cost of production of a unit of commodity]. Suppose that while maintaining this price for the purchaser who cannot pay more, the monopolist makes a higher price $O\ b'$, and manages that it should be paid by those purchasers only who have a demand for the commodity at this price, the amount demanded being $B'\ b'$. The monopolist's gain is increased by the rise of price paid on this amount of commodity; his gain is then represented by the area $B\ b_1\ a\ b'\ B'\ b_2'$. The Purchaser's Rent [corresponding to Dr. Marshall's Consumer's Surplus] is reduced for all those who pay the price $O\ b'$ and purchase at this price the quantity $B'\ b'$ to the curvilinear area $B'\ b'\ F$. The surplus for those who could not pay the price $O\ b'$, and continue to purchase the quantity $B\ b_2'$ at the old price, $O\ b$ is represented by the area $B\ B'\ b_2'$. The total utility afforded by the monopolised industry after the expenses of production have been paid for, formed by the addition of the monopolist's gain to the purchaser's rent, remains what it was, equal to $B\ b_1\ a\ F$. If now the monopolist makes a third price $O\ b''$, lower than $O\ b$, and manages that it should be paid only by the purchasers of the amount $b_1\ b_1''$, which corresponds to the increase of demand due to this lowering of price, it appears that his gain on his increase of sale is represented by the rectangle $B''\ b_1''\ b_1\ b_2''$. The purchasers who pay the price $O\ b''$ for the goods which they would still find it for their advantage to buy if they could not obtain them otherwise for prices between $O\ b$ and $O\ b''$ benefit by a surplus represented by the area $B''\ b_2''\ B$" (Vol. I. p. 223).

There is thus brought out the important fact that a monopolist, by charging two (or more) prices, can benefit at once himself and his customers. This result is obtained by getting rid of the dead loss (*perte sèche*) incident to a single price, represented by the area $B\ b_2'\ B''$ in our figure; a loss to the consumer which is no gain to the monopolist.

This proposition remains true when the monopolist is the State. There is, indeed, a peculiarity in the exercise of monopoly by the State as compared with the "economic man" or company. It is open to the State, by aiming at a point a little below that which affords the maximum of profit, to confer a considerable benefit to its customers with very little loss to itself (Vol. I. p. 220; Vol. VI., *passim*). There is here involved the important principle which has been thus enunciated in the ECONOMIC JOURNAL. "A small change of an economic variable quantity at the margin commonly causes a *very small* change in the corre-

sponding surplus." The priority in the application of this principle to Economics seems to belong to Dupuit.[1]

Our limited space does not permit us to dilate upon many topics of great interest, such as the elegant illustration of the way in which general expenses—met by tolls (*péages*)—influence the character of competition (Vol. I. p. 230), the analysis of the entrepreneur's functions (pp. 269–273), the use of what some call *a priori* probabilities to show that the continued coincidence of supply- and demand-curves is incredible (Vol. I. p. 308). That sort of probability is (in effect) again employed to estimate, in the absence of precise data, the advantage obtained by consumers from a fall in price (Vol. VI. p. 203).

The principles established in the first volume are applied in the sixth to Public Works. As we understand the definition of this term, the essential attribute is an absence of competition which necessitates the intervention of Government; and the differentia is the economic character of the service admitting of measurement by money. Railways and some other modes of transportation come under this category in that they require the sanction of the State—a "private Bill" at least in England, if not a "concession," as in France. The masses of knowledge, marshalled skilfully under leading principles, which M. Colson brings to bear on this subject, cannot be adequately passed in review. A desultory inspection is all that we can attempt.

I. The principles which govern the price of transportation—fares and freights—are first discussed. If all roads were like the waterways of the ocean, a gift of Nature, the price of transportation would nearly correspond to the prime, or "partial," cost of production. But, in fact, a considerable part of the price consists of tolls, whereby the cost of constructing the roads is compensated. The question is raised, whether the State ought to defray this part of the price. Certainly not, when the service benefits only some particular locality. But so far as the use of a general railway system is common to the community, it is not unreasonable that the community should contribute to its construction. Conversely, it is not unreasonable that tolls paid by the travelling public should be employed to relieve the general taxpayer. Whatever shares of the total utility (Monopoly Revenue + Consumer's Surplus) may be assigned to the travelling public and the taxpayer respectively, the one important condition is that the total utility

[1] See ECONOMIC JOURNAL, Vol. XVIII. p. 400; and compare Dupuit, *De la Mesure de l'utilité des travaux publics*, *Annales des Ponts et Chaussées*, 1844, Vol. II. p. 370.

should be maximised by adapting prices to what each category of the traffic will bear. But M. Colson is well aware that it is often difficult to carry out this precept perfectly; to charge, for instance, a different freight for lime according as it is destined for agriculture or building purposes, if that is a case in which the destination can only be known by the declaration of the customer—the " destinataire."

II. Statistical fact follows on economic theory; and in the second chapter we are presented with figures and diagrams showing the extent, growth, receipts, expenses, charges of the roads, canals, harbours, railways in the principal countries of the civilised world. The relations between the State and private enterprise in the different countries are exhibited; in particular, the transactions between the State and the railways in France, a complicated subject, which not even French lucidity can render attractive to the general reader.

III. To measure the utility of improvements in transportation is interesting with respect to progress in the past, and useful with respect to projects for the future. The direct and main cause of increased advantage is diminished cost. The statistics adduced in this connection, showing the cost of various kinds of transportation, cannot well be reproduced in a summary. One difficulty is caused by the great discrepancy between extreme and mean prices. For instance, transport across the Channel costs several centimes per ton-kilometre, while the charge for the same unit of transportation in a sailing ship over distances exceeding 20,000 kilometres might be some fraction of a *millime*. Another difficulty illustrates the composition of " toll " and " partial cost " in the charge for transportation by rail. The average charge per train-kilometre in France is 2 francs 34 centimes. " But if we inquire the expense caused by running an additional train, within the limits of elasticity constituted by the organisation of the service, without increase of the *personnel* in the stations, we may estimate it as between 1 and 2 francs," according to the circumstances. So in the opinion of many experts, the cost of the passenger service is such as to leave the companies very little profit. But this is not to say that the " partial cost " of production for one passenger more is not much less than what he has to pay. Reduction of cost, as we understand, is the cause rather than the measure of advantage. Thus the annual turnover of the railways and tramways of the world may be estimated at 30 milliards (£1,200,000,000); the transportation thus accomplished, if effected by road, would perhaps represent an expense

of 150 milliards. But we cannot measure the benefit procured for the public by the difference between these figures. Over and above the direct benefit, of which Purchaser's Surplus affords the correct measure, there is a stimulus to industry, a succession of beneficial consequences accumulating like a snowball. But this indirect benefit affords no ground for maintaining at the cost of the taxpayer an enterprise which cannot defray its cost of production. Against the encouragement to industrial customers we must now set the discouragement to the industry of the taxpayer, a negative snowball of accumulating detriment. The indirect benefits are commonly exaggerated by the projectors, who clamour for Government assistance—like that one of Molière's *bores*, who, in order to increase indefinitely the King's revenue, proposed : " En fameux ports de mer mettre toutes les côtes."

IV. Under the head of *Systèmes Généraux de Tarifs*, M. Colson considers different kinds of discrimination. In the discussion of this and other topics, he has been largely anticipated by one English and several American writers. But even their readers may have something to learn from our author as to the methods of classification, and the variation of charges according to distance, practised on the European Continent. Competition is another circumstance producing diversity of tariffs. The two species designated by Professor Ripley as competition between routes and commercial rivalry, are classed by M. Colson as " prix fermes." He includes in the same category the case in which a railway lowers its freights to encourage consumption.

V. Comparing competition and combination, M. Colson is in accord with all high authorities in ruling out unqualified *laissez-faire*. Discussing competition between railways and other modes of transport, he severely condemns the partiality with which the subvention of the State is employed in France to exempt canals from tolls, to the prejudice of the railway companies and of the public.

VI. If some Governmental interposition in " public works " must be admitted, what form should it take : operation or control ? Our author inclines strongly to the latter alternative. He argues that Governmental management is more expensive, and has less elasticity in the variation of charges according to what the traffic will bear. The political abuses to which State operation would lead in France form the decisive argument against this regime. In the exercise of its control the State may properly insist on new constructions and other improvements being made by railway companies; provided that the companies are guaranteed

against the risk of the enjoined outlay proving unprofitable. Here, again, we come in sight of the important principle that a small loss to the monopolist may be a great gain to his customer.

VII. The best method of securing co-operation between the controlling and the controlled parties, " le concédant et le concessionnaire," is a financial association. The golden rule for securing coincidence of interest between the financial partners is that the company should not be called on to make an outlay which exceeds its share of the resulting receipts. On this principle, net, rather than gross, receipts should be divided between the parties. The rule is sufficiently well carried out in the arrangement between the State and the larger companies in France. But it is otherwise when, as in the case of the smaller companies, it becomes necessary to substitute for the account of actual expenditure computed or conventional amounts. The formulæ adopted in practice for this purpose are of extreme complexity, presenting, when expressed in mathematical form, a fearful jumble of symbols. Yet, after all, the main conditions for a " formula of exploitation " are not satisfied. M. Colson proposes a simpler and doubtless more effectual formula for the constructive expenses of railway traffic. This " three-term formula " is of the type $a + b\,R + c\,T$; where a represents general expense independent of the amount of traffic, R is the actual receipts, b is some proper fraction, T denotes the number of train-kilometres (*le parcours kilométrique des trains*), c a fraction of the mean cost of an additional train-kilometre. For instance, if that additional expense is about sixty centimes, then putting for c *three-quarters* of that mean cost we might have for D the constructive expenditure (in francs) :—

$$D = 800 + \frac{R}{4} + 0{\cdot}45\,T.$$

If the Company increases the train-mileage by an outlay of 60 centimes per kilometre, and the receipts exceed the outlay, the Company will regain more than they have spent—three-quarters of the expenditure in virtue of the third term of the formula, and more than a quarter in virtue of the second term. On the other hand, if the receipts fall short of 60 centimes, the Company will have no interest in making an expenditure which is unprofitable to the community.

VIII. From Transportation our author goes on to the other kinds of Public Works, such as the distribution of water and gas. But we have said enough to excite the interest of the reader. We could not by a continuation of disconnected extracts convey an

adequate impression of the work as a systematic whole. "Disjecti membra poetæ" cannot represent an epic.

Principles of Political Economy. By JOHN STUART MILL. Edited with an Introduction by W. J. ASHLEY. (London: Longmans. 1909. Pp. 1013.)

PROFESSOR ASHLEY is fortunate in the opportunities of his publication. The country has been for many months agitated by a debate relating to the expediency of measures of which the most authoritative, if not quite the earliest, exposition is to be found in Mill's *Political Economy.* The work has been quoted by the Prime Minister in the House of Commons and by an Archbishop in the House of Lords. Most of the arguments in favour of taxing both unearned increment of land value and inherited property, which have resounded on Liberal platforms, are derived more or less consciously, more or less accurately, from Mill's *Political Economy.* The access to this source of influence is facilitated by Professor Ashley. His introduction is, indeed, a leading into the mind of his author. He sketches Mill's mental history in a truly historical spirit, forbearing "to interpose between the reader and the author, and to assign either praise or blame." His treatment is not less objective because he recognises the magnitude of the object: "It is a great treatise, conceived and executed on a lofty plane, and breathing a noble spirit." "Mill," remarks the editor sympathetically, "is a very human personality"; and the remark is illustrated by the variations of feeling shown in changes which Mill introduced in the successive editions of his work. In the laborious work of collating the different editions, Professor Ashley has been assisted by Miss M. A. Ellis's article in the ECONOMIC JOURNAL for June 1906. Miss Ellis also contributes a Preface; supplying a want which had long been felt by students. We still desiderate an *apparatus criticus* which might point to and bring into one view passages connected by identity of logic rather than of terminology: for instance, all the passages affected by Mill's difficult doctrine that "demand for commodities is not demand for labour." Professor Ashley does indeed contribute to the interpretation of his author by his Bibliographical Appendix. The succinct notes here appended seem to us to be almost ideally adapted to the purposes of education. The select references will either suffice for the student, or will lead him on to other authorities. It is thus that

a few introductions to the principal personages in a neighbourhood will usually enable the recipient to extend his acquaintance to others of less note. We could wish that the introductions furnished in the Appendix were more legibly printed. It is a misfortune that the long extract from Mill's important but not easily accessible fragment on Socialism, here reprinted, should be visible only to the "microscopic eye." But this is the fault of the publisher, or of the public taste which he caters for. We have only praise for the editor.

Standards of Reasonableness in Local Freight Discriminations. By JOHN MAURICE CLARK. (Columbia University Studies.) (New York: Columbia University. 1910. Pp. 155.)

IN his search for a standard of reasonableness, Mr. Clark has retouched the theories of economists and reviewed the decisions of tribunals. We shall briefly notice some out of the many topics on which he has shed new light.

With reference to the law of cost pertaining to railways, Mr. Clark well exhibits the connection between *joint cost* and *discrimination*. In his definition of joint cost he follows in the main Professor Marshall; while he entertains the question which has exercised American economists, "whether it is proper to apply the law of joint cost to a plant producing a homogeneous output as well as to one whose output is of several kinds" (p. 28). The cognate concept of "special" or *prime* cost is well presented; its relation to the magnitude of the object to which the term is applied has seldom, if ever, been so clearly stated.

"When one relates the term 'special cost' to a definite increment of traffic, one finds that it spreads into more and more kinds of expense in proportion as the traffic increment is increased in size" (p. 33).

"If a traffic manager has under consideration a rate, an interrelated schedule of rates, or a rate policy, that affects *large volumes of traffic*, he must consider, as the special cost of the traffic he is valuing, a large share of items usually classed as general or constant" (p. 35).

So the special cost of an aggregate of numerous services is not the sum of the special costs of each (p. 37 *et passim.*)

Does cost, when properly interpreted so as to include general expenses, afford the ideal standard for apportioning railway rates? To carry out this idea we might add to the cost of operation, varying with the distance over which a commodity

(of an assigned class) is hauled, a sort of *tax* which would not vary with the distance. This tax would have to be supplemented by an equal tax—a sort of *excise*—on goods sold in places which have access to railway carriage, when those goods have *not* been carried on a railway. Otherwise we should be *protecting* local producers against others in the neighbourhood who might be more efficient, and so violating the principle which underlies the proposed ideal: that each producer should get the benefit of his "natural" advantages. The writer admits that such a scheme is "fantastically unlike anything we are likely to see." But he seems to think that the difficulty of apportioning the general cost, which constitutes the "vitiating element" of such a scheme, is reduced when we consider large units of traffic of which the "special" cost, as above explained, includes a considerable share of the general expenses.

Instead of the cost of a service to the railway, may we take as our standard the value of the service to the shippers? In this connection it is well observed by Mr. Clark:—

"The value of any service may then be defined as that charge which will in the long run bring in, over and above the special cost of the traffic involved, the greatest clear return possible" (p. 55).

This canon of monopoly is not to be identified, as some eminent writers have conceived, with the principle of "equality of sacrifice" in taxation.

"There might be between railroad self-interest and truly 'equitable concession' as wide a difference as that between ancient systems of taxation, aiming only at the largest obtainable revenue, and a modern system intelligently based on the tax-bearers' ability to pay" (p. 64).

The inappropriateness of the term "sacrifice" in the sense in which it is applied to taxation is thus further argued:—

"Who are the payers of rates, and in what sense are their sacrifices equalised? In what sense can we speak of their sacrifices at all? If a transportation service involved a true sacrifice it would never be made" (p. 65).

The doctrine applied to discriminate in favour of the weaker producers might lead to the perpetuation of the economically unfit (p. 66).

Will competition suffice to secure reasonable rates? Not desperate war between railways; not the "semimonopolistic truces of an anomalous competition" (pp. 42, 72). More may be hoped from what has been called "competition between markets";

the relation between two railway-systems serving respectively two territories which compete against each other for the supply of a neutral market. In this case the interest of the railway is largely identified with that of its customers.

" To keep themselves in business they [the carriers] must keep producers in business in their territory, and keep the business of these producers up to a maximum volume."

Still, even in this case the railroads may wield the power of monopoly injuriously. It may be good tactics to favour a large firm; in the words of a railway official, " to give one hustler a special rate and let him scoop the business " (p. 71, and *cp*. p. 21).

From economic theories we turn to the decisions of tribunals : the principles of common law as interpreted by the courts, the various State and Federal statutes, and the ruling of the Interstate Commerce Commission. In his search for a standard of reasonableness, Mr. Clark examines an immense mass of American judgments and precedents; some of them familiar to students of Professor Ripley's valuable compilation of documents relating to *Railway Problems*, many of them less accessible to the English reader. The results of this elaborate review are thus summed up by the author :—

" The central [standard] is that of comparative cost; modified towards conservatism, especially in the courts, by consideration of established interests; slightly modified by the ' infant section ' [perhaps a misprint for ' infant industry '] idea; and imperceptibly, if at all, by the standard of symmetrical development [as to which standard see pp. 127–8]; but modified most of all by necessary concession to the practices which must needs go with private competitive rate-making, especially that of making ' blanket rates ' or others which ' just meet ' competition over a wide area " (p. 135).

Mr. Clark applies his principles to the construction of an American distance-tariff not ineffectively. But his principal success consists not so much in the solution of practical problems, as in his clear statement of the issues and elucidation of the principles involved. He has done for the standard of reasonableness in railway rates something like what Sidgwick did for the standard of reasonableness in moral conduct. To have improved by philosophical criticism a department of political economy in which his countrymen already excelled is no slight achievement for a young author. Mr. Clark, inheriting a name distinguished in economic literature, has added to it new lustre.

Railway Rate Theories of the Interstate Commerce Commission. By M. B. HAMMOND, Professor of Economics and Sociology, Ohio State University. (Cambridge (Mass.): Harvard University. 1911. Pp. 200.)

PROFESSOR HAMMOND has done a useful work in analysing the decisions of the Interstate Commerce Commission. Of the various applications to which this analysis lends itself we shall mention two: a special and a general use.

To those who are engaged in the organisation and management of railways in the United States this book is likely to be of considerable practical value. Railway Presidents will be enabled to read the thoughts and anticipate the judgments of the Commissioners to whose control they are subject. It is thus that legal practitioners are benefited by an exposition of "leading cases," a digest of precedents, in a land where a simple code is not available. The arrangement of dispersed data has called for no ordinary power of classification. Whether the logical operations involved form, in our author's phrase, an "inductive study," it might be ungracious to inquire. The question seems to turn on the existence of an order resembling the uniformity of Nature in the subject-matter. One would hardly describe Heraldry, for instance, as an inductive science. That epithet may, however, be deserved if there exists, as our author presumes, "the possibility of evolving a theory of railway rates from a study of the decisions of such railway commissions as have already been in existence." This brings us to our second head.

Railway experts in the author's country are not the only class to which this book will prove useful. It may be read with advantage by the lay citizen of other lands who wishes to form an intelligent opinion on measures affecting the relation between railways and the State. Not that the conclusions of the Interstate Commerce Commission are directly applicable outside the United States. Yet some instruction is to be derived from considering the premises and methods of the Commission. That institution is admittedly one of the most impartial, intelligent, and efficient organs for the regulation of railways in the interest of the public. Its success forms a sort of high-water mark of what may be expected from such regulation. The height attained can now be observed more accurately. The scrutiny is assisted, not only by our author's analysis, but also by this reproduction of passages from the Reports of the Commission which are not very accessible to the European reader. It appears to us that the

deservedly high reputation of the Commission does not show more favourably upon a nearer view. Some inconsistencies are brought to light. Thus Professor Hammond finds it difficult to reconcile the "blanket" rate for the carriage of milk to New York permitted in the Howell case, with the zone system prescribed in a later case on the ground that "furnishing an article like milk in no greater quantities than is required for daily use in a given city is a business which falls naturally to those producers nearest the city who are able to provide the needed supply." The epithet "arbitrary" occasionally bestowed by our author appears to be deserved by some of the orders designed to maintain the natural or geographical advantages of localities. It is not always easy to apprehend the principle on which the Commission approve or disapprove of a difference of rates between raw and finished articles; in particular, flour and wheat. Free traders will suspect decisions which savour of Protection against foreign countries, or Protection of one State against another. It is tenable, in the matter of export and import rates, that if the railways had been let alone, to charge what rates they pleased, in consulting for their own interest, they would have best promoted the interests of the country. But the doctrine of *laissez-faire*, that one who "intends only his own gain" is "led by an invisible hand to promote an end which was no part of his intention," must be applied with peculiar caution in a regime of monopoly. How far would it be accurate to use the words of Adam Smith, who had not this regime in view, and to describe the power of a Railway Commission as "an authority which could safely be trusted not only to no single person, but to no council or senate whatever"?

We have given the impressions which Professor Hammond's book has produced on us rather than his own expressions. His criticisms are models of moderation, cautious and courteous. But they are not the less effective. His hinted doubts are more persuasive than the hectoring tone of controversialists like Professor Hugo Meyer. In a certain efficacy to sap authority we can only compare this work to the reminiscences of the two ladies who kept house for Herbert Spencer. Nothing can be more respectful than their attitude to the philosopher; yet in noting many a littleness on the part of the great man they at least reduce the altitude of the pedestal on which he might have posed to more distant admirers. Thus, unintentionally and without taking a side, our modest author has contributed something towards the decision of the issue between private manage-

ment and public regulation. He assists his readers to strike the balance between considerations placed in opposite scales by able advocates, such as the two Professors surnamed Meyer. A slight but sensible weight appears now to be added to the scale with which Professor Hugo is identified. *Pro tanto* something is shown to be wanting in the scale preferred by Professor Balthassar; a name which, occurring in this connection, suggests an inclination of the balance more decided than we mean to indicate.

Wealth and Welfare. By A. C. PIGOU, Professor of Political Economy in the University of Cambridge. (London: Macmillan & Co. 1912.)

ORIGINALITY has set its unmistakable mark on Professor Pigou's work. But this distinction is not inconsistent with some resemblance to great predecessors. The author appears to have drawn inspiration from two very high authorities on wealth and welfare. The good which philanthropy and statesmanship should seek to realise is defined by him in accordance with Sidgwick's utilitarian philosophy; to investigate the means conducive to that end he employs the method perfected by Dr. Marshall. Like Sidgwick, Professor Pigou is not open to the imputation of materialism which is sometimes brought against economists. He lays down two propositions: "first, that welfare includes states of consciousness only, and not material things or conditions; secondly, that welfare can be brought under the category of greater and less" (*Wealth and Welfare*, p. 1). These propositions (with their context) do not postulate a psychology (like that of J. S. Mill) specially favourable to ultilitarianism; but they do postulate the absence of a metaphysic (like that of T. H. Green) which denies practical significance to a conception such as "aggregate welfare" or "satisfaction." Much of our author's philosophy recalls Sidgwick's utilitarianism. For example, the following sentiment is not often met with outside the pages of Sidgwick: "If the life of an average workman contains, on the whole, more satisfaction than dissatisfaction, an increase in numbers, even though it leave economic welfare per head the same, involves an addition to economic welfare in the aggregate" (*loc. cit.*, p. 29). Like Sidgwick, Professor Pigou is prepared to admit that, in Sidgwick's phrase (*Politics*, p. 583), "One person may be more capable of happiness than another." According to Professor Pigou, "We may sometimes be able to say that the more cultured

Class A, has a keener appreciation of, and derives more satisfaction from, practically all objects than the less cultured Class B does" (p. 48). On the assumption, however, of similarity of temperament (p. 25), we may conclude with Sidgwick that the more equal distribution of wealth tends to increase welfare. To diminish inequalities in the distribution of the national dividend (among the members of the nation) is accordingly one of the modes of welfare of which Professor Pigou investigates the conditions in one Part of his treatise. To diminish inequality of distribution in *time* is the proximate end to which another Part is directed. Much the longest of the separate Parts is directed to the increase of the national dividend. In investigating causes conducive to these approximate ends Professor Pigou brings to bear a mass of facts and a power of reasoning which in their combination find a parallel only in the *Principles of Economics.*

The inductive element of the treatise, being necessarily diffused, cannot easily be exhibited here. We have not space to exemplify our author's frequent citations of relevant evidence. Our readers must take on trust our impression that the verification of general reasoning by specific experience has been adequately performed, especially with regard to British labour and charity. Professor Pigou seems to have fully utilised the information obtainable from official reports and contemporary economic literature. He is aware, of course, that facts are often not apposite. What he says about one of the methods of increasing national income which he investigates—Purchasers' Associations—is probably of wide application : "No great weight can reasonably be attached to historical examples, and we are driven forward to an analytical study" (p. 239).

Of the numerous valuable contributions to economic theory which are presented in this treatise, the most brilliant, no doubt, are those which assume the form of mathematical reasoning. But a considerable degree of practical importance attaches to other arguments which take the classical form of deduction from psychological generalisations. Of this simple type is the argument directed against the popular reasoning that if a person is *enabled,* by a subsidy, to work for less, he will therefore be *willing* to work for less (p. 348). The experience of the old Poor Law is not so conclusive as is commonly supposed : the subsidised workmen did not accept a wage lower than the worth of their work to their employers; rather the worth of their work was very small, owing to the system of differential relief (p. 349). Of the same simple type are some deductions concerning the

consequences of transferring resources from the rich to the poor; a nice distinction being drawn between the fact and the expectation of such transferences. It makes a great difference whether the transference is voluntary or coercive; the expectation of the latter leads to a diminution of the national dividend, while the new motive implied in the former tends to an increase of waiting and effort, and so of the dividend (p. 365). Again, the expectation of taxation to be levied at some future time will have a smaller restrictive influence on investment than an annual levy (p. 375). The influence will be particularly small when the tax is postponed till the investor's death. This consideration is to be set against, and may overbear, another presumption from which "it follows mathematically that, in general, the death-duty method [of taxation] is likely to trench on capital somewhat more than the income-tax method" (p. 353).

In the last proposition we have passed from simply psychological deductions to such as involve some tincture of mathematical reasoning, but not more than is generally presupposed in modern economic treatises. Even so classical an economist as M. De Foville now employs curves of supply and demand. In this category we may place Professor Pigou's theory of differential wage-rates, which occur when the wage payable for a particular kind of work performed by some men (say the more competent) is artifically raised above the wage payable for the same work performed by other men. With a minimum of aid from mathematics it is argued that "an artificial wage containing a differential element is less likely to imply a real transference from the relatively rich as a body to the relatively poor as a body than one which is free from such an element (p. 335). The properties of the demand-curve afford important deductions. The great elasticity of the demand for labour is used as a premise in arguing the old question whether labour-saving machinery is likely to be detrimental to the labouring classes. Going beyond Ricardo and J. S. Mill, Professor Pigou concludes that if an invention of the class considered diminishes the portion of the dividend accruing to labour, the magnitude of the diminution must be very small indeed (p. 89). And this, even on the supposition—which is, of course, far from being true in general—that the commodity in respect of which a constructive idea has been discovered is not consumed at all by the working classes. The same premise employed in another argument leads to a conclusion of quite classical trenchancy: that "generally speaking, a transference of resources from the relatively rich to the

relatively poor, brought about by interference with the natural course of wages at any point, is unlikely to do otherwise than injure the national dividend, and therewith in the end the real income of the relatively poor" (p. 343).

We shall notice in a separate paragraph some more technical matters which we cannot hope to make interesting to the general reader. In this category is probably to be placed Professor Pigou's "curve of marginal supply prices." This orignal construction is useful as rendering more distinct, by contrast, the conception of a supply-curve. It is still more useful as an adjunct to the test for maximum utilisation of resources, the far-reaching principle that the more nearly equal marginal net products in all uses are, the larger the dividend is likely to be. This principle, as applied by Professor Pigou, is one of the splendid novelties occurring in this treatise the importance of which a reviewer cannot be expected upon short notice to gauge accurately. It is certainly of great theoretical interest. Another difficult theorem relates to the shape of demand-curves. They are in general *concave*, according to Professor Pigou (p. 210, and p. 402, where "convex" is doubtless a misprint for "concave"). This statement may give pause to the reader who recalls that demand-curves are treated as *convex* by one of the highest authorities on mathematical economics, Dupuit. His view is referred to in a former number of the ECONOMIC JOURNAL (Vol. X. p. 287) in connection with the suggestion that in certain circumstances of common occurrence the locus may be treated as a right line. There are thus before us three propositions: that, probably, the demand-curve is concave, is convex, is neither. Paradoxical as it sounds, all three propositions may be right. For the first two refer to different circumstances; and when we are ignorant which of the two cases is present, the third, the intermediate statement, may be appropriate. Dupuit supposes that, as the price is lowered, new strata of customers are reached; and so the curve stretches away from the axis representing price. Professor Pigou must be understood to suppose that the customers are, or may be, treated as a homogeneous body. Indeed, the more exact statement of his doctrine is that which he has given in an earlier work to which he refers. "In the case of a typical individual," the *third* differential coefficient of utility (with respect to money) is negative. The third differential coefficient of utility makes its unfamiliar appearance in connection with another doctrine, namely, that "a diminution in the inequality of distribution, in the sense of a diminution of the mean square deviation from the

mean income, probably increases satisfaction." This follows from the expression of (aggregate) utility in ascending powers of the said deviations; since the first term of the expansion is zero, the second negative, and "we know nothing to suggest whether the sum of the terms beyond the third is positive or negative" (p. 25).

The last proposition employs, in addition to the calculation of utility, the *second* mode of physical mathematics, the calculation of probability. The probability involved is of the kind which has been called "unverified"; based on impressions which are the record of general experience, rather than on specific statistics. This species of probability is largely employed by Professor Pigou. It is the basis of his proof that the pursuit of economic welfare is compatible with higher aims: "When we have ascertained the effect of any cause on economic welfare we may, unless, of course, we have evidence to the contrary, regard this effect as *probably* equivalent in direction, though not in magnitude, to the effect on total welfare" (p. 61). The "unverified" species of probability is also employed in the construction of a new index-number (p. 47). Again, the principle underlies the presumption that certain phenomena are independent, or, at least, not closely correlated. Thus, the increase in the variability of real earnings in one industry might be so correlated with the (undiminished) variations in other industries as to diminish the variability of aggregate earnings (p. 421). So variations in the conditions of business might conceivably be compensated as to their psychological effects by mistakes in the business man's forecasts (p. 454). But such correlations are not *probable*. For "when a magnitude is made up of two parts, each of which varies more or less independently of the other, the variability of the whole is likely to be larger the larger is the variability of either part" (p. 454).

The ordinary or statistical species of probability makes its appearance in the proposition "that the precision of an average is proportioned to the square root of the number of terms it contains" (p. 141). The principle is largely employed in connection with the fluctuations of business and labour. This species of probability enters along with utility into the following theorem. Let A and B be two similar persons who have each a fluctuating income, or, more exactly, "a variable consumption." Let the normal consumption of A be much larger than that of B. Then "the economic welfare of A and B jointly is increased by any system of transferences which, while leaving the average consumption of each unaltered, diminishes the variability of B's

consumption, even though this diminution takes place at the cost of an increase in the variability of A's consumption" (p. 402). It is similarly concluded that "the exposure of £100 to a scheme of uncertainty whose range is narrow is easily seen to have a smaller value in the market than the exposure of this sum to a scheme whose range is broad" (p. 100). But does the latter argument require as a premise—what the former argument no doubt does—the new proposition above noticed regarding the *third* differential coefficient of utility? Is not the proposition regarding the *second* differential which is commonly employed in the theory of insurance sufficient? But it is with diffidence that we suggest a correction in a matter relating to insurance. For our author's treatment of that subject is particularly lucid and instructive. He arrests attention by announcing—in connection with the advantages of "voluntary transference" to which we have referred—a way by which "transference can be made economically profitable to the transferor." The way is simply mutual insurance. Those who are fortunate and escape the loss which has been insured against, may be regarded as relatively rich, making a transference to persons who have become relatively poor (p. 366). It pays to undertake the risk of such transference, even though the adjustment between the premiums paid and the risks carried by different members is imperfect—within limits. The limits are less than ordinarily narrow in the case of workpeople (p. 367).

From the extracts which we have given it will be gathered that this treatise abounds in new ideas. But it is impossible by extracts to do justice to the author's logical arrangement of topics and lucid order.

> "Ordinis hæc virtus erit . . .
> Ut jam nunc dicat jam nunc debentia dici,
> Pleraque differat. . . ."

The latter part of the Horatian maxim proves a hard saying to many. But our author never dilates upon the obvious, never diverges into the irrelevant. He goes straight on, with even march, as it were along a Roman road. Flowers there are by the roadside, but not so frequent or so gaudy as to distract attention. Epigram is used only to clench argument. For example, as against the now fashionable doctrine that progress depends only on breeding, not at all on education and economic conditions, it is argued that though educational conditions may not influence offspring in the physical world, they do favour new births in the world of ideas. "Environments, in short, as well as people have children" (p. 59).

New ideas well presented are applied to many old problems. Even such familiar themes as the public control of monopoly and the public operation of industries are enlivened by *recherché* arguments. But the new weights put into the scales of deliberation are not over-estimated. For instance, with reference to the waste of resources caused by cost which hinders the movement of workpeople and by their mistakes in judging what is to their own interest; it is shown that where error of judgment exists, a cheapening of the cost of movement may prove socially *injurious*. The case is not merely academic, but is applicable to the aimless wanderings and useless changes of situation which are sometimes occasioned by facility of movement (p. 119). "But these exceptional cases are not subversive of old-established beliefs." When we are contemplating, from a general point of view, the consequences of these diminutions [in cost of movement and in falsity of judgment], "it is not the *possible*, but the *probable*, effect that concerns us" (p. 121). With regard to the more familiar considerations which Professor Pigou from time to time quite properly throws into the balance, we think that he might with advantage have more frequently referred to standard versions of similar arguments. Thus, in connection with the failure of harmony between private and social interest (p. 158), and context, there might have been expected a reference to Sidgwick's masterly treatment of that subject in the third book of his *Political Economy*. Again, when Professor Pigou places among the ultimate effects of an artificial wage-rate the circumstance "that the reward of employing power and waiting in industries in general being somewhat reduced, these factors are likely to be forthcoming in somewhat diminished quantities" (p. 343), he might have referred—with an expression of assent or of qualification—to some of the leading writers who have dwelt on that circumstance.

The originality which we have noted with respect to theory makes itself felt in several practical suggestions. The author has, we believe, only one precursor in the suggestion that it is possible to increase the national dividend by imposing differential taxes on industries governed by the law of diminishing returns (p. 179). Many suggestions are directed to improvements in distribution. Munificence might be encouraged by honours and decorations, a new "order," not interfering with the attractions of old ones. On more familiar lines Professor Pigou advocates a modified form of income-tax which should exempt resources devoted to investment in general (not to insurance only) (p. 371).

He mentions with approbation Rignano's plan of taxing inheritances with increased severity at each successive devolution (p. 376). But he would confine taxes on unearned increments to "windfalls" (p. 370). He would accompany transferences from the rich to the poor with strict conditions (p. 392). He is in favour of "taking some cautious steps" towards a very drastic treatment of the very unfit (p. 55). Among plans for reducing fluctuations of earnings there is adduced Mr. Balfour's suggestion that when industry is depressed, a bounty should be given to firms making for foreign orders, in such wise as to enable them to accept contracts. Why not to firms making for British orders, suggests Professor Pigou (p. 481). He is "inclined to believe" that a very considerable net benefit would result from a method of steadying prices such as that proposed by Professor Irving Fisher (p. 438; *cp.* p. 464). There would be available for the purpose the index-number proposed by Professor Pigou, in which the prices of commodities at one of two compared epochs are weighted with the quantities of the commodities consumed at the other epoch (p. 46). One of the most ingeniously deduced proposals is the one about the value of which we are least confident. With a view to maximising the national dividend, it is concluded that in the regulation of railways discrimination, or the "value of service" principle, should be adopted at one (probably brief) stage of a country's development, and "this principle should give place to simple competition, or the cost of service principle, as soon as population has grown and demand has risen sufficiently to lift it out of that stage" (p. 234).

The last topic introduces our principal difference with Professor Pigou. He seems to us in his estimates of probabilities not always to attach sufficient weight to *authority*. For instance, on a question of definition, the use of the term "joint-cost," more deference might have been shown towards Professor Taussig (p. 216). We think it very improbable that an "accident of language" (p. 217) should have conduced to a "fallacious general argument" on the part of Professor Taussig (p. 219). The following passage brings out the matter at issue: "Principal Hadley and his followers, not content with demonstrating that fact [that a certain case *may* occur in practice], add, without argument, that this case is typical of the whole railway world, and suppose themselves, therefore, to have proved that the value of service principle ought to be followed in the determination of all railway rates. Such an unargued inference is plainly illegitimate" (p. 231). It is plainly legitimate, we think, to defer to

the unargued judgments of the leading authorities on railway economics with respect to the question whether a certain abstract case may be taken as typical of the actual facts. This is just one of those matters which are amenable to the Aristotelian doctrine that we ought to attend to the unargued pronouncements of the practically wise, who have acquired by experience a certain power of mental vision.

Here arises the question: How far do our author's theories belong to the category of practical wisdom, or to that higher kind of science which the philosopher distinguishes as grand and wonderful and difficult, but not useful for human purposes? Mathematical economics are certainly useful to some extent; but does the further elaboration which that study has received in this treatise imply a correspondingly large contribution to the Art of Political Economy? The analogy of mathematical physics does not help us to answer this question; the calculus of utility and probability is something so peculiar and unique. "Ai posteri L'ardua sentenza!"

The Economy and Finance of the War. Being a discussion of the real costs of the war and the way in which they should be met. By A. C. PIGOU. (London: Dent, 1916. Pp. 96.)

THE author of *Wealth and Welfare* here deals principally with the first of these subjects, and only incidentally with the second. The costs which he discusses are economic in a strict sense: "the costs that come into relation with governmental expenditure and the Chancellor of the Exchequer's Budget." In this technical investigation he displays a talent which is required in economics even more than in other sciences, the power of penetrating beneath the surface of appearances, discerning unobvious truths and exposing popular fallacies. For example, it will be a surprise to many readers to learn that a married soldier with dependants to whom separate allowances must be paid does *not* involve more real cost to the nation than a single soldier with no such dependants. This is one of several startling propositions which will probably appear at first sight to the general reader foolishness, and even to the expert a stumbling-block. They would certainly have so appeared if propounded at the beginning of the war. But since then the attention of students has been directed to the economics of war by many writers, notably Professor Pigou himself in the *Contemporary Review* of 1915 (noticed in the ECONOMIC JOURNAL, March

and June, 1916, among "Recent Periodicals"). For instance, in the article to which we refer we have read something like the following passage, which is taken from the work before us :—"The services of lawyers, of highly-skilled gardeners, of poets, of men learned in the ancient languages, of musicians, of young men medically unfit or with conscientious objections to combatant service, of midwives, of women with special skill as children's nurses, of ballet dancers and music-hall artists, are much less valuable to Government than they are to private employers." A similar theory, with corresponding practical deductions, may be found in Mr. Bickerdike's article, *On Paying for War by Loans* in the ECONOMIC JOURNAL for September, 1915.

In this connection we may observe that Professor Pigou is singular in forbearing to support his doctrines by authority. The volume is almost a "record" in that it does not, so far as we have noticed, mention a single other economic writer. The author, no doubt, thought that his little book would be more attractive to the public if not encumbered with allusions to economic literature.

His simple and direct method of exposition is certainly very effective. Very striking too are the propositions enounced, of which we subjoin some examples. We have preserved the form of these specimens almost intact; yet it is to be feared that they have suffered by being torn from their contexts, which we have indicated and advise our readers to consult.

To pay a man, whether he be a member of Parliament, or a contractor, or a workman, much more than his services are worth, this, undesirable though it may be, does not involve any waste of national resources (21). If museums and art galleries are shut down and the saving in respect of their staffs are utilised by the State, the real costs to the public include not only the services represented by this saving, but also the services of the capital invested in these institutions, the loss of which is balanced by no service to the Government (34). The result of closing scientific and artistic exhibitions in a "piecemeal" fashion, without taxation of substitutes (which was presumably the state of things at the time of writing, before the Budget of 1916), might be merely to increase correspondingly the demand for picture palaces and public-houses (39). So import duties, instead of causing people to employ less capital and labour in respect of the needs which they used to satisfy by importation, may cause them to satisfy their needs through the manufacture of identical or similar things in a more expensive manner at home (39). By economising in respect of commodities which obey the law of

diminishing returns we enable ourselves and others to obtain so much of these as we continue to consume at a diminished cost of capital and labour—a consideration of special importance in time of war when demand for certain classes of goods is urgent and before supply is adapted to demand (35, 36). The imposition of duties is a clumsy method of bringing about economies compared with the method of "rationing," at least with respect to articles which form part of the staple food of the poor (40). The line of cleavage between present and future resources does not coincide with the distinction between taxing and borrowing; among other reasons, heavy taxation of the poor may impair personal capital (47 *et seq.*). The payments of interest on an internal national loan afford no evidence of any *net* burden to the nation as a whole (49). By impeding investments our Government has *pro tanto* encouraged the people to meet the demands of war by drawing on the future rather than on the present (50). The real cost of foreign imports in terms of domestic produce has risen in a *smaller* degree in Germany than it has done in England (p. 56). Whereas by cutting down unnecessary imports we may direct the capital and labour employed on the corresponding exports from the work of indirectly yielding imported luxuries to that of yielding imported shells, we may effect a similar economy if we divert resources from making commodities for home use and turn them into making more commodities for export (60).

As we interpret, these propositions, like most of the abstract truths of political economy, are to be regarded only as first approximations, to be supplemented in practice by concrete circumstances. "Apart from administrative difficulties," a clause which Professor Pigou introduces with respect to his preference for the policy of "rationing," is often to be understood. For instance, we agree with our author that the payment of interest on a national debt involves no *net* loss to the community as a whole; not the kind and amount of loss which popular writers and even respectable economists take for granted. But it is not meant to deny that to raise and pay for a large loan involves "administrative difficulties" and secondary consequences which may prove serious. The very fact that the public does not accurately distinguish between a foreign and a home loan is a circumstance not to be ignored by the financier who, as Professor Henry Adams well observes, should attend to the psychology of the tax-payer. This kind of consideration would not be all on the side of taxation as against borrowing. The facility of raising large sums without

compulsion, the freedom from vexatious interference with the course of industry, are on the other side.

We trust that our author has taken account of all these psychological considerations when in more than one context he urges present effort and sacrifice. Thus he advises resort to " current capital and labour " in preference to parting with some of the American securities which we hold. He italicises the dictum: "*It is in the national interest that the war should be financed in the utmost possible measure by the utilisation of current capital and labour, and that our saleable property—gold and securities alike—should be rigorously conserved*" (64). With reference to the choice between taxes and loans, he concludes that " the ratio in which the war is financed with money borrowed from people with large incomes should be much diminished, and the ratio in which it is financed with money collected from them under some form of progressive taxation should be much increased " (83).

The premises by which this conclusion, especially the latter part of it, is deduced are of extreme interest. There is in favour of distributing the burden of taxation not in the proportion normal to a regime of peace, but in a proportion less burdensome to the poor, *first* the consideration that the poor will be placed in consequence of the war in a worse position comparatively. The high rate of interest and the circumstance that its payment was contracted during a period of monetary inflation will secure to the capitalists a larger share of the national dividend; and the total will be smaller owing to the destruction of capital, the deficiency of tools and machinery (73 *et seq.*). Moreover, the currency inflation which borrowing from banks for war purposes is likely to produce will inflict additional hardship on the poor, whose incomes are not likely to rise as rapidly as prices. [This hardship, as we understand, would exist only during the war. The subsequent depression, too, will not, in Professor Pigou's judgment, prove, as many apprehend, an " economic disaster " (84)—provided that we can meet the present financial requirements of the war.] The case for the poor is further strengthened by the circumstance, already mentioned, that their efficiency is apt to be impaired by heavy taxation. But has the author given due weight to the counterbalancing circumstance, that by reducing the income of the rich you diminish their power of saving—their objective means, for as to their motives, account is taken of these, as we understand, among the considerations which follow?

So far we have been on the solid ground of economic cost.

But now we ascend to " values outside the economic sphere " (1), when, in order to determine the adjustment of taxation, we take account of the " subjective burden of suffering and sacrifice." Let it be granted that the distribution of the objective burden by the system of taxation adopted in peace-time was fair and proper. " Then suppose the amount of objective burden all round to be quadrupled. There is reason to believe that a quadrupling of the objective burden on a poor man will increase the subjective burden of sacrifice and suffering laid on him in a proportion higher than that in which the quadrupling of the objective burden on a rich man raises his subjective burden." It follows that the proportionate share in which the expenses of government when greatly enlarged are borne by the rich ought not to be the same as before, but greater (78).

So far as we understand, the argument would hold good in whichever of its variant forms we accept the doctrine of " sacrifice " as the criterion of proper taxation. The argument is clinched by an appeal to the doctrine in that sense which has been called in this Journal *minimum* sacrifice. " Other things being equal, the absorption of a pound from a rich man strikes at much less urgent wants, and, therefore, causes much less suffering and real sacrifice, than the absorption of a pound from a poor man. It follows that the aggregate amount of sacrifice involved in providing any given revenue would be at a minimum if the whole of the funds required were lopped off the few largest incomes enjoyed in the country." The practical reasons which deter economists from advocating this system in general are not valid as regards " special taxes levied on an exceptional occasion for the purpose of financing an unprecedented war." Thus a much larger proportion of the objective burden which the present war imposes upon the community should be laid upon the rich than it is proper to lay upon them for normal peace expenditure.

An argument involving the conception of " aggregate amount of sacrifice " as a quantity to be minimised—or the corresponding positive quantity, a maximum of aggregate satisfaction—may appear to some metaphysicians nugatory. But we submit that the essence of the reasoning—whatever alterations in wording and emphasis may be desired—commends itself to practical good sense. We are, indeed, far from ignoring the danger of applying such doctrines to ordinary practice. But we think that Professor Pigou has guarded against that danger by prescribing only for the exceptional cases of an unprecedented war. Nor do we find, in his concern to minimise the privation of the majority, any trace of

that materialism which *littérateurs* like Carlyle and Ruskin have attributed to cognate ways of thinking. Witness this estimate of the cost of war in the larger and truer sense of the term: "Compared with what this war has cost and is costing in values outside the economic sphere—the shattering of human promise, the accumulated suffering in wounds and disease of many who have gone to fight, the accumulated degradation in thought and feeling of many who have remained at home—compared with these things the economic cost is, to my mind, trivial and insignificant."

ECONOMISTS ON WAR

Händler und Helden. Von WERNER SOMBART. (Munich: Duncker and Humblot. 1915. Pp. 145.)

The Neutrality of the United States in Relation to the British and German Empires. By J. SHIELD NICHOLSON. (London: Macmillan & Co. 1915. Pp. 92. 6*d.*)

An Economic Interpretation of the War. (Reprinted from *Problems of Readjustment after the War.*) By EDWIN R. A. SELIGMAN. (New York: Appleton. 1915. Pp. 72.)

Les Causes et les Conséquences de la Guerre. Par YVES GUYOT. (Paris: Alcan. 1915. Pp. 416.)

THE Editor has been well advised in arranging that this set of recent publications relating to the present war and war in general should be brought together under one view. The judgments pronounced by eminent economists of different nationalities are calculated to be mutually corrective. For instance, the opinion of Professor Seligman that the present war is mainly due to the opposition between the material interests of Germany and England may be set off against the opinion of Professor Sombart that the war is mainly due to the opposition between those nations in character and mentality (*Anschauungswelt*). The "incomparable superiority" of the German heroic spirit over the English mercantile character forms the burden of Professor Sombart's theme. He supports his thesis by a deft use of English literature; taking now More's *Utopia*—especially some practices of war which a recent editor of the *Utopia* describes as "repellent to us"—now Herbert Spencer's philosophy, as typical of English thought and character. His general view of that character as utilitarian, or in his phrase "individualistic-eudæmonistic," must, we think, be admitted. It is an impeachment which we, for our part, own with

pride. This trait is prominent in the caricature which our author presents overlaid and distorted by objectionable features. Some of them had already made their appearance in Professor Sombart's *Der Bourgeois* (1914); and are justly described by the friendly reviewer of that work in the ECONOMIC JOURNAL as evidencing "the sin of over-generalisation." The "large, swinging generalisations" which another reviewer, Professor Clapham, notices in Professor Sombart's writings are conspicuous in the pages before us. One of his theories connects the mercantile character of the English with their excessive love of sport. "The shopkeeping spirit (*Krämergeist*) is the direct parent of 'Sportismus' in which all the ideals of the trader are realised." "Sport is the twin-brother of comfort"; and "Komfortismus" is inimical to the true, the heroic culture. Thus the materials for shaving (*Rasierapparaten*) which a German hero found in one of the English trenches, and apparently mentioned in terms of respect, seem to our author a hateful sign of the hollow English commercial civilisation (*Krämerkultur*). Whether he possesses the gifts of sympathy and humour in the degree required for the delicate task of delineating national character may be judged from the following passage—succeeding the complaint that Churchill, or Lloyd George, had declared England would win because she could put down the last million, thus nakedly exhibiting the purely capitalistic conception of war:—
"But the most disgusting feature," continues Professor Sombart, "which this war has brought to light is this: that it is regarded by Englishmen as a kind of sport. When the *Emden* had at last been captured (*zur Strecke gebracht*) on the summons of an overwhelmingly superior force, it was to be expected that the English Press should be jubilant. In truth, English trade was freed from a relentless persecutor. But what happened passes belief; the heroic Captain von Müller was lauded to the skies. Should he come to London, it was said, he would be greatly fêted (*würde er der gefeierste Mann sein*). Why? Was it because he had performed heroic deeds in loyal fulfilment of his duty to Kaiser and country? Oh, no! Only because he had shown himself such a splendid sportsman (*weil er so hervorragende sportliche Leistungen vollbracht hätte*)." It is difficult to find an English equivalent for the expression which we have attempted to paraphrase. The English feeling, if not the German phrase, may be expressed by saying that Captain von Müller had fought like a gentleman. Strange that a nation of shopkeepers should have such feelings!

After exhibiting the poverty and flat mediocrity (*Plattheit*) of

the English mind, our author dilates enthusiastically on the German " geist " and love of fatherland. He claims, not without reason in our judgment, some affinity between the German conception of the State—as a " super-individual, a life outside us "—and the forms of ancient thought. " The German spirit catches its fire from the spirit of the ancients; and Plato's Republic is the model (*Urbild*) after which all the German ideal conceptions of the State have been formed."

But the humble utilitarian may still repeat the question which Aristotle asks with respect to the Platonic Republic: Who are the happy there? Certainly not the common people, he adds. Professor Sombart's interesting view of Germany before the war recalls the warning which Aristotle gives against the exclusive cultivation of the military virtues: " Most of these military States are safe only while they are at war; like unused iron, they rust in time of peace.' Compare our author's striking description of the aimlessness of German life in time of peace. They went to and fro like swarming heaps of ants—

" Zerstreuter Ameis-Wimmelhaufen."—*Faust.*

They wrote books and plays, and critics in shoals did nothing all their life but criticise, and cliques were formed, and fought with each other, and no one knew to what end (*wozu*). Socialism had almost fallen to the level of English Trade Unionism, sunk in sport and comfort. Mere pleasure, which our author apparently considers a pitiful object to aim at (*das erbärmliche Behagen*), and the happiness of the majority had become the end of the Socialistic movement.

Then came the war like a revelation. " Hier offenbart sich die Gottheit." War appears to the German as " a holy thing, the holiest thing on earth." " We are a people of warriors." " Militarism is Potsdam and Weimar in sublime union." It permeates all German art and literature, even the poems of Goethe. The solitary exception is the sorry tract of the aged Kant on *Everlasting Peace.*

But there is another doctrine taught by Kant—not the old and drivelling Kant, but the philosopher in his prime,—which we find a difficulty in reconciling with the conduct to which Professor Sombart exhorts his contrymen. So act that from the thought of your maxim as a law universally obeyed no contradiction results. What would constitute a contradiction in Kant's sense we would not undertake to define. But we predict that much opposition—and therewith much misery—will result from the

attempt to make universal an attitude like that which is thus held up to admiration :—" When the German stands leaning on his mighty sword, clad in steel from head to foot, then may all the world (*was will*) dance below about his feet, and the intellectuals, the artists and scholars of England and France, of Russia and Italy, may abuse him and throw mud at him as they now do. He will not let himself be disturbed in his lofty repose, and will merely, in the spirit of his forefathers in Europe, say within himself—

'Oderint dum metuant.' "

The motto appears, indeed, to be well suited to a people intending to play the bully. The words, we believe, were not first used in an ancestral German forest, but on the early Latin stage, put into the mouth of a personage who indeed belonged to the heroic age, but was one of the most discreditable specimens of that age. Cicero (*De Officiis*, 1. 28) quotes the saying as illustrative of poetical propriety. If it had been put in the mouth of a just hero, like Minos, it would not have been in keeping (*indecorum videretur*). But when it was uttered by the villain Atreus there was a burst of applause; " for the expression suits the character." We read, too, that Caligula adopted the motto as expressing his sentiments.

To complete the image of the steel-clad German it should be added that the attitude of disdainful calm will be on occasion abandoned. " Should it be necessary to increase our territory we will take as much land as appears necessary. We shall also take all the strategical points that seem good enough in order to maintain our impregnable strength. If it is of any use to our position of strength in the world, we will establish stations for our fleet—for example, in Dover, Malta, Suez."

It appears to us that to people who are predisposed to act in this masterful manner the burning words of the ecstatic Professor may have a certain hortatory force, something of that unanalysable influence by which people are converted to first principles of conduct. We liken him in this respect to Karl Marx—Marx as described by Professor Sombart himself in what we regard as the best criticism of *Das Kapital* known to us (*Das Lebenswerk von Karl Marx*, 1909, reviewed in the ECONOMIC JOURNAL, Vol. XIX). Marx, according to his candid critic, made no great contribution to the technique of science. And yet there was something demonic about the man, compelling assent to his general views.

For those who are in danger of being carried away by Professor

Sombart's turgid eloquence we may prescribe as an antidote Professor Nicholson's incisive wit. His well-known powers of satire have never had a fairer object than the rhapsodies of the German author. Merely to state the pretensions of German militarism is to make them appear ridiculous to English readers. For instance, "The idea of humanity attains its highest and richest development in particular noble nations. These for the time being are the representatives of God's thought on earth. Such were the Jews, such were the Greeks. And the chosen people of these centuries is the German people. . . . Now we understand why other people pursue us with their hatred. . . . So the Jews were hated in antiquity because they were the representatives of God on earth. . . ." But it is no easy task to convey in English ideas so foreign to English thought. As Professor Nicholson observes, "Some kinds of thought seem to find appropriate expression only in the polysyllables and breathless sentences of the German tongue." In view of this difficulty we have already availed ourselves largely of Professor Nicholson's spirited translations. We have only space for one more extract. With respect to the so-called cultural internationalism, Professor Sombart boasts, "Fortunately we Germans do not require anybody in matters of spirit or of culture. No nation in the world can give us anything worth mentioning in the field of science or technology, art or literature." It is rather an anti-climax, remarks Professor Nicholson (whose words we distinguish from Professor Sombart's by the absence of inverted commas), to read that, after all, foreign nations may offer some things of spiritual value, but the situation is saved by "always excepting England, which does not produce anything of cultural value." This is praise indeed, comments Professor Nicholson.

The German author's travesty of British character is corrected by Professor Nicholson's juster view of the motives which have led us British into the present war. No doubt we pursue our own interest. But that interest is not to be measured in terms of money and trade. "Our most real interest is to maintain those principles and ideas on which the British Empire has been built up." . . . "The greatest British interest is liberty," "The greatest Happiness Principle in relation to Liberty," the immediately following head in the contents, the dictum that "with the mass of the British people the supreme test is still liberty," suggest philosophical inquiries which it would be out of place to pursue here.

Among topics more germane to the ECONOMIC JOURNAL we should notice Professor Nicholson's exposition of the influence which List's *National System* has exercised on the commercial development of the German Empire. "The leading idea in German commercial policy has been the imitation of England in the lines laid down by List." According to List, "Holland belongs as much to Germany as Brittany and Normandy to France." He thought that the right of the English to the Continent of Australia on the principles of first occupancy was as absurd as the right claimed by the Popes over the partition of the New World. But as to the means of attaining these ends there is a vital difference between the method advocated by List and that actually pursued by Germany. List looked to peaceful measures for the expansion of German commerce. Holland was to be induced by a system of preferential duties to enter the German Zollverein. "German settlements in the continent of Australia were in some way to be arranged for by a general European policy as regards the appropriation of vast unoccupied territories."

We are hardly concerned here with the special purpose of Professor Nicholson's brochure—to inquire how far the interests of the United States are bound up with the maintenance of the British Empire against German aggression.

Professor Nicholson's inquiry would be otiose if all Americans were neutral in the same sense as Professor Seligman. "How bootless it is," he exclaims, "to estimate from the Blue Book or the White Book or the Yellow Book which statesman or set of statesmen is responsible for the particular action which led to the declaration of war! If the war could have been averted now it was bound to break out in the more or less immediate future. Germany like England, Austria like Russia, Italy like Serbia, each was simply following the same law which is found in all life from the very beginnings of the individual cell—the law of expansion or of self-preservation." In the history of this expansion there are, in modern times at least, three stages. There is first, as we understand, common protection. Thus the United States have "built up an enormous industrial power through a national protection." They followed the example set by England a century before. But England "having built up her industry by the most extreme and ruthless system of protection that the world has ever known, and having wrested a large part of her world-empire from her competitors . . . now found it her interest to

go over from a system of protection to one of free trade." This forms the second stage of development. The third is reached when "the emphasis is transferred from the export of goods to the export of capital." With the beginning of this century Germany entered on the third stage. England's war with Germany marks the final stage of a competition involving not simply the export of goods, but the export of capital. The financial influence thus obtained leads to a political influence which brings with it economic advantages. "It would be tedious as well as unnecessary to state in detail the countless benefits that England has derived from India or, more recently, from Egypt, and the numberless subtle ways in which she has contrived, just as every other nation would have done, to retain most of these benefits for herself." The prospects of such exploitation form an inevitable attraction to the chief nations of the world; "it seems hopeless to expect any effective resistance to a temptation which is so compelling, so illimitable, and so promising of success under the conditions of actual economic life." "We are likely to see during the next few generations wars on an even greater scale than the present one." At last far off the dream of Adam Smith may be realised.

The prospect of peace on earth and free trade between men of different nations is not so remote in the view of M. Guyot. Yet we fear that the preliminary steps will take time. The final purpose, or at least proximate end, is to substitute the civilisation of exchange for the civilisation of rapine. In promoting this end we must prove the superiority of our civilisation by rejecting the policy of reprisal, by resisting the promptings of national hatred. Thus only can we accomplish the necessary moral dissolution of the German Empire. There is required also the political dissolution of that Empire; to secure a durable peace by satisfying the aspirations of the numerous groups who have been victims of oppression, Belgium must, of course, be evacuated; and it also goes without saying (*est au dessus de toute discussion*) that Alsace-Lorraine must be restored to France. The German colonies are to be divided among the Allies, not for the sake of territorial annexation, but as a guarantee of peace. As to the exaction of an indemnity, we must not attempt to destroy (*juguler*) the conquered Germany. We should be careful not to keep alive a spirit of revenge by striking at individuals. These conditions and the requirements of justice may be sufficiently satisfied by our taking the German railways, the Prussian mines, and some other

trifles of this sort. In fine, free trade should be imposed on Germany—a condition which the author justifies by exhibiting *more suo* the evils of protection.

Alas! none of our authorities lead us to expect a speedy end of the present war, much less of war in general.

La Germania alla Conquista dell' Italia. By GIOVANNI PREZIOSI. Con introduzione e appendice del Prof. MAFFEO PANTALEONI. Seconda edizione interamente rifatta. (Florence: Libreria della voce, 1916. Pp. xxxii + 272.)

THIS is a second edition of a work which seems to have been published early in 1915; a second edition, largely rewritten, or rather rearranged. Redactions of this sort put a student of the earlier edition at some disadvantage. The distinction between what he has read before and what is fresh is obliterated by changes of form and insertions of new matter; the clear impressions obtained from the first reading become blurred. We may obviate this sort of confusion by observing that in the present version sections are reproduced *en bloc* from the first edition, not, however, in their original connection, but with intercalated sections borrowed from *La Banca Commerciale*, a work *in pari materia* by the same author, which first appeared about April, 1915. The two publications are named together as authorities for the important study on German methods in Italy which Mr. Albert Ball contributed to the *Quarterly Review* of last July. Mr. Ball's special acquaintance with Italian conditions enables him to corroborate some of the reasons assigned by Signor Preziosi for regarding the "penetration" of Germany as dangerous to Italy. For instance, Mr. Ball points out some circumstances which render shareholders—nowhere a very wide-awake class—in Italy particularly incapable of looking after their own interests, so that it was the easier for the Banca Commerciale to obtain control of a company by purchasing a substantial block, though only a minority, of its shares. Professor Pantaleoni also, in the new Introduction and Appendix which he contributes to the second edition, assists us to appreciate the significance of the facts adduced by the author. We should also call attention to the note which Professor Pantaleoni appended to the first edition referring to the Banca Commerciale. He there clearly exhibits the distinction between a "bank," in what we may describe as the English sense of the term, and a credit institution engaged in

financing industry. The latter sort of house does not require to keep a large amount of liquid capital—it is, indeed, astonishing how small a proportion of German capital served to set the Banca agoing. When such a bank has become an established institution it can exercise a formidable power by affording long credits to some firms, while it refuses accommodation to others. Confidential communications—*informazione riservate*—between interdependent banks are directed against boycotted firms. Then the alliance of the Press is brought to bear against the victim—the Press whose influence over the mind of the average ignorant citizen is described by Professor Pantaleoni with his usual felicity. Thus it comes about that, in our author's words, " when the Commerciale goes to war with any firm or company, whether to get the business into its own hands or to ruin it, it proves not to be difficult to create round the object aimed at an atmosphere of suspicion, to excite against it political prejudice, to discredit it morally, and to withhold from it all banking accommodation [creare . . . il vuoto bancario].

When the efficacy of these and other underhand practices is explained it becomes intelligible that the Banca Commerciale has made considerable progress in the " conquest " of Italian industry : that it has directed the savings of the Italian people towards the fostering of manufactures in Germany or German enterprise in the East : that it has obtained control of the shipping and the iron trades, and many other branches of Italian industry, including the mercantile marine. " And who," exclaims our author, " can compute the enormous sums spirited away by this system from the pockets of the Italian people with the sole object of realising the maximum of profit, without any concern for the prosperity of the country, the improvement of the working classes, and the political independence of the nation ? "

The picture of Italy thus strangled by the German octopus is dark indeed. But we may suspect some exaggeration, a tendency to overstatement, which is particularly regrettable, considering that the subject calls for judicial impartiality in a peculiar degree. For many of the statements, such as those relating to the transactions between companies, or rather their directors, must be largely inferential and require to be guaranteed by our confidence in the judgment of the witness. The evidence which can be set before the public must often be of a kind which, as Professor Pantaleoni observes, does not comply with the strict requirements of a court of justice. Even where documentary proofs exist, they may not be accessible to the general public.

Take, for instance, the surprising statement that the Socialist, Jaurès, was in the pay of the Germans. This is said to be proved by documents which Urbain Gohier has adduced in his *La Sociale.* But the majority of readers, to whom those writings are not accessible, must be content with authority as the basis of the statement. No doubt the authority is good—that of Professor Pantaleoni. Very high authority appears to us to be required in order to outweigh the *a priori* improbability of such a statement.

When we have ascertained the facts there remains the still more difficult inquiry, What conduct do they justify? Even Signor Preziosi admits that it is difficult to define the point at which the activities of foreign bankers cease to be advantageous and become detrimental to the country into which they have penetrated. Supposing that point passed, what action should be taken? Will it be sufficient to ensure publicity and to brand with infamy Italians co-operating with foreigners in the conquest of Italy? Or are stronger measures called for, such as Kruger, for instance, employed against the English, if not so strong as those which the Jews of old employed against their heathen neighbours?

The question concerns not only the particular country which is invaded, but all the civilised—as distinguished from the " kultured "—countries. Suppose that after the present war the majority of the nations by concerted action secure that no one country will again attempt, with any prospect of success, to wrest territory from others by military conquest. Yet, as the energies of enterprising men cannot be entirely bottled up, would not the discontinuance of war constitute an additional ground for allowing a vigorous nation to extend itself by economic expansion, which should be resisted by similar pressure in an opposite direction, rather than by measures discriminating against aliens? How are we to define the arts and aims to which the odious character of " conquest " is properly attributable from a " penetration " which is really peaceful and conducive to the increase of the world's wealth and the survival of the economically fit? In answering this question we must be careful not to follow those who are influenced by the Protectionist fallacy that the gain of the foreigner involves detriment to the home country. Nor are we much moved by our author's complaints that the foreigners have no " concern for the prosperity of the country " into which they have penetrated. Should we not rather agree with Adam Smith when he says, " I have never known much good done by those who affected to trade for the public good "?

But how far does the reasoning of Adam Smith and his disciples require to be modified when the traders under consideration are not competitors aiming each at his own maximum profit, but agents of a foreign State aiming at the expansion of that State, and in combination with each other and the State employing discrimination between customers and other practices not contemplated in the classical theory of competition? Economic theory is based upon presumptions as to the normal conduct of business. Now, "these presumptions," as Professor Pantaleoni puts it, "are founded on experience. Accordingly, when experience shows that the character of others has features of which we were before ignorant, we should take account thereof in our conduct for the future. . . . Not without profound modifications in our manner of thinking and feeling, and consequently in our conduct, experience will have taught us that it is dangerous to devote ourselves to the arts of peace while a neighbour is preparing for war, that it is foolish to trust to treaties if the neighbour values them as 'scraps of paper,' . . . that even in time of peace there is possibly a penetration by foreigners anticipating or preparing for war [*prœbellica*] while clothed in the delusive forms of commerce and industry."

The Application of Official Statistics to Economic Problems. By J. C. STAMP. (London: P. S. King, 1916. Pp. 538.)

AT least two reviewers would be required to do justice to the diverse merits of this work, which combines minute description of official regulations with comprehensive views on fiscal policy. We do not feel competent to appraise the accuracy of the descriptions. We shall, therefore, advert with some reservation to that large portion of the work which is devoted to the exposure of fallacies due to imperfect knowledge of details. With more confidence we shall praise the author's skill in handling figures and his subtlety in the treatment of economic and social problems.

Following an order suggested by these distinctions we begin by observing that the information compiled by Mr. Stamp will be useful and interesting to various classes of readers. The theorist who aims at reconstructing the income-tax so as to effect an ideally perfect graduation may find that it is not so easy as it seems on paper to shape the rough material of official statistics into forms of mathematical elegance. The tax-collector and all concerned with the administration of the income-tax will be

assisted in the exercise of their functions. They will realise the truth of the maxim laid down by historical economists, that in order to know what an institution is, you must know how it came into being. Our meaning may be illustrated by reference to Mr. Stamp's description of the successive phases which have been passed through by the allowance for repairs under Schedule A, or the construction of farmers' incomes under Schedule B or D, or abatements and exemptions generally. The historical retrospect is sometimes carried back to the early years of the tax. The statistics of Pitt's income-tax are interesting as the only example in this country of compulsory returns for all incomes. But Mr. Stamp seems to think that not much is to be learnt with reference to the distribution of income at the present day from statistics relating to a period so remote, and perhaps not even then accurate.

Mr. Stamp has employed his immense knowledge of details to detect errors occasioned by want of such knowledge. He thus gives a new and impressive confirmation of the maxim that figures without facts—the statistics of one who is not conversant with the subject-matter—are illusory. One who taught that lesson last century, Lucas Sargant, in his collection of the "Lies of Statistics," gives an instance which typifies not a few of the errors now under consideration. The deterioration of the race in large towns was argued on the strength of statistics which were interpreted to mean that "there are more than twice as many children born to each country-dwelling pair as (than) are born to each couple in Manchester." On examination it proved that the number of births given related not to married couples, but to *marriages solemnised* in Manchester and elsewhere. As Sargant puts it somewhat coarsely: "Couples came into the city to be married and went back to breed." Similarly the statistics for Schedule E of the income-tax, given separately for London, the rest of England, and Ireland indicate only where the assessments are *made*, not where the officials carry on their duty. The conclusion drawn by eminent Home-Rulers that the number of officials in Ireland was (in 1909–10) 4,397, but in Scotland 944, is absurd. Their reasoning would prove that "while it required 944 officials to manage Scotland and 4,397 to manage Ireland and 82,896 to manage London, all the rest of England was managed by nobody" (quoted by our author from Samuel's *Home Rule*). So under Schedule D the investments of Irishmen in Irish companies are assessed not infrequently in London. The comparability of assessments relating to different times is rendered dangerous by

changes in the proportion between gross assessment and the true income which remains after deduction of items figuring in the assessments. Well do the authors of the Inland Revenue Reports warn their readers against "an implicit reliance upon the inferences which the mere figures appear to warrant." The mere terms are equally deceptive. "Private dwelling-houses," in the terminology of Somerset House, include many kinds of premises which would not commonly be thus denominated. A "farmhouse" is an equally deceptive term. The amateur is puzzled by distinctions without any apparent difference; for instance, a Wesleyan or a Presbyterian minister is assessable under Schedule E, whereas a Baptist or Congregationalist is assessable under Schedule D. In short, there are pitfalls everywhere; and few there are who do not fall into them. A list of those who have not escaped these dangers would include some of the most distinguished names in the roll of economic honour. Baxter, Bonar, Colson, the *Economist*, Giffen, Goschen, Leone Levi, W. R. Lawson, Mallock, Palgrave, W. H. Price, Shaw-Lefevre, Snowden—they have all gone astray and fallen short of our author's high standard of statistical perfection. One name only among those that are frequently cited by Mr. Stamp is conspicuous by its absence from the black list which we have compiled. We trust that we have not presumed an exception where none exists; that Mr. Stamp would not disallow our interpretation—like the guidwife who, when twitted with professing a doctrine so narrow as to include among the elect only herself and her guidman, replied that she was "nae so sure of John." The position of John is possibly occupied by Dr. Bowley, not so much on account of his treatment of statistics as his treatment of official statisticians. To the strictures which have been made by Dr. Bowley and others upon the statisticians of Somerset House, Mr. Stamp replies: "Many of the criticisms urged against the income-tax statistics show a real failure to appreciate the genuine difficulties of the subject and its intractability for ordinary treatment. . . . Any one who imagines that a taxed 'income' is—or *can* be—under the most ideal system, a simple objective fact like a death or a bale of goods or a cheque or a railway mile . . . is asked to devise . . . a scheme of taxation which shall fit all the complexity of modern life like a glove, pay over taxes without irritation, hesitation, or evasion, and yield statistics that a babe can handle."

Here naturally arises the question whether the author has himself committed any fallacies of the kind which he condemns

in others. We can only say that we have been unable to detect any more serious slips than the following. First, we have to complain that our author sometimes uses a term or figure without any concurrent or previous explanation of its meaning—like an inattentive host who puts you beside a stranger without an introduction. You may perhaps find out in the course of conversation to whom you are talking; eliciting by an inductive process what you would like to have been told at first. For instance, we read at page 90, with reference to a change in the method of assessment for Schedule B, "The most frequent pitfall brought about by the change in method is in the comparison of aggregate assessments without allowing for the break of £37,000,000." Do we read before or in the immediate context anything about this figure thus mentioned as if it were familiar? It is not till on a later page (p. 288, referred to, indeed, at the passage quoted) that we find that £37,000,000 is an allowance made in one particular instance of the "pitfall" described generally in the passage quoted. Again, at page 340 allusion is made to "two preceding sets of figures," which no doubt do precede in the journal which is quoted, but in our author's version have to be interpreted by means of the table on a subsequent page (p. 342). On the latter page the reference to "this Royal Commission" is not very helpful, as a number of matters have intervened since the mention in an earlier page of the "R. C. on Agricultural Depression." The most serious instance of this sort of ambiguity is the use of the symbol $\pm$ which occurs early and often in the book. No doubt the practice of statisticians justifies and explains the use of the symbol to denote "probable error." But, on the other hand, Dr. Bowley, in an Address to which Mr. Stamp has particularly referred, uses the symbol in a somewhat different sense, to denote not the error which is as likely as not to have been committed, but the error against the commission of which the odds are about two to one. Further, Mr. Stamp employs the symbol in connection with the phrase, "range of doubt" (p. 405). There appears to us to be a range of doubt as to the meaning of this phrase. It might well designate not the "probable error," but an improbable one, so large as to be practically impossible, say four times the probable error as usually defined. Compare Mr. Stamp's expression, "margin of possible error" (p. 13). We were in real doubt as to the author's usage of the symbol until we found it almost at the end of the book used in connection with the term "probable error." One or two other ambiguities are due to misprints of the kind which makes, not nonsense, but

an absurd sense, which might conceivably be attributed to the author. A mistake of this kind was made in printing the beautiful line in which Tennyson includes all the varied subjects of Virgil's *Georgics* :—

> "Thou that singest wheat and woodland, tilth and vineyard, hive and horse and herd."

One may imagine how annoyed the poet was to find that the printer, puzzled by the unfamiliar word "tilth," but presuming that it had something to do with agriculture, had put down "tithes." With similar feelings Mr. Stamp will find at his page 368 among the estimates of rents paid to absentee Irish landlords, 1691, £136,000; 1729, £627,799 (prior); . . ." A hasty or uninformed reader might interpret the parenthetic "prior" as denoting the period *previous* to 1729. But, of course, the reference is to Thomas Prior, the author of *List of Absentees of Ireland*. Again, at p. 83 and context, Mr. Stamp is arguing that though the farmer in Scotland used to pay only a third of the gross assessment, while the farmer in England paid a half, there was not so much difference, there tended to be an equality in the real burdens of the tax, since *ceteris paribus* the gross assessment was larger in Scotland. A misprint of "3" for "2" (at line 2 of p. 84) makes him appear to verify the argument by falsifying the arithmetic. Such are the only errors which our unusually severe scrutiny has detected. They are of a kind which can be altered by a stroke of the pen, and will no doubt disappear in a second edition.

Mr. Stamp does not confine himself to the negative result obtained by refuting fallacies. He is not like the officials of whom Dr. Bowley complains, content as it were to erect boards warning statisticians and journalists that there was Danger. Mr. Stamp has mended the public roads, so that, if we may use the language of prophecy, in future the way-faring men shall not err therein, "though fools," or at least though not as wise as Giffen and others for whom the old, unmended highway proved unsafe. One of our author's most useful tasks is to "purify" the figures in such wise as to allow of the comparison between incomes at different periods. Thus, under the head of "Taxable Income" he shows (Table G, 4) the true comparative series of figures computed first on the conditions of 1871 to 1893 (with £150 exemption limit and no repairs allowance); and secondly, on conditions since 1894 (£160 exemption limit and repairs allowance); in place of the official figures hitherto generally used for

comparative purposes, but not properly adapted for such use. It would be interesting to exhibit the difference in the rate of growth presented by the different methods of computation. For a beginning, we find that, taking the three years 1853–4, 1854–5, 1855–6 as a base-period, with index-number 100, the index-number for 1913–14 is, according to the official figures, 378; according to Mr. Stamp's first computation, 450; according to his second, 469. In the construction of tables adjusted so as to exhibit consistent sequences Mr. Stamp occasionally used mathematical methods of interpolation; but in many instances he thinks "they do not give results so consistent and accurate as a freehand method which follows, on a technical instinct, the trend of each series of figures, and duly observes the numerous checks and limits afforded by other branches of the statistics." He employs mathematical constructions of a simple style appropriate to the character of his materials—less perfect than biological and physical statistics. Thus he makes frequent use of "Pareto's law," representing the distribution of incomes. He has employed an interesting method for obtaining a datum required in one of his ingenious investigations on the distribution of income and related subjects. In order to find that amount of rental which makes it an even chance that an occupier of a house of that rental should have an income of £160 or more the author put the question to many official acquaintances, and thus obtained forty "semi-statistical" observations, the grouping of which allows us to accept with confidence the average £28 10*s*. as the required figure. We notice that in the problem of determining the relation between income and house-rental Mr. Stamp has derived much assistance from the unpublished statistics of his friend Mr. Cowcher. We hope that these tantalising statistics will not remain unpublished.

The logic of statistics is applied by Mr. Stamp to economic and social problems, in conjunction with other powers, the organon of economic theory, and the speculative instrument of greater delicacy which is required for adjusting the burden of taxation, considered not merely as an arithmetical problem, but, as Mill says, having regard to the "wants and feelings" of the taxpayer. Thus, in order to determine the taxable capacity of Ireland, one of the problems treated by Mr. Stamp, the first step is to ascertain the ratio between the respective national incomes of Great Britain and Ireland regarded as numerical quantities. Mr. Stamp's scrutiny of the relevant income-tax statistics brings to light the surprising circumstance that advocates on the side of Ireland have under-rated her claims. They have used the gross

assessments, the total incomes reviewed for the two countries as data for the determination of the required ratio; not noticing that the proportion of (gross) Schedule A (and B) bears a much higher ratio to the total in Great Britain than it does in Ireland, and that this difference is significant because Schedules A, B include the *whole* gross income from land and property, while in the other schedules the *exempt* income, for the most part does not figure. Making the required correction, Mr. Stamp finds that the ratio which Professor Oldham, on the basis of the gross figures, gives as 25 to 1 ought to be, in respect of this correction, 29 to 1. But this is not the only correction required. A more serious mistake has been committed (with respect to the older figures) in treating the assessments in Schedule B as representing *incomes* instead of annual values representing three times the taxable incomes. But even if we could ascertain the true proportion between incomes we should still be far from having determined the contribution which may properly be demanded from Ireland. What alleviation is required by the circumstance that a large portion of the Irish rental—one-third, according to Lord Milner—goes to England, and that another large fraction of the annual value of Irish land goes as interest to the Treasury or to English lenders? Mr. Stamp argues ingeniously that this circumstance would make no difference if the whole revenue were raised by the income-tax. But so far as the revenue is not raised by income-tax, or other taxes *shiftable to absentee consumers*, the drain must be allowed for in judging of the taxable capacity of Ireland. A more speculative question is raised when it is contended on the one side that the Irish surplus above the minimum of subsistence is less, and on the other side that the minimum required for subsistence and efficiency in Ireland is less than the corresponding amounts for Great Britain. Mr. Stamp, after weighing the arguments of Giffen and Sidgwick, Sir C. Hamilton and Professor Bastable, concludes: "For my own part I think that although the adjustment [made by Giffen and others in favour of Ireland] may be criticised, they contain a much smaller net error than the unadjusted figures and give a closer approximation to the truth." A cognate difficulty is raised by the question: What weight is to be attached to the circumstance that a larger proportion of the Irish taxable income is made up of small incomes, which, according to the existing system of abatements, are taxed at a lower rate? Mr. Stamp well says "it is a mathematical corollary from the marginal and progressive principles that the capacity of wide extremes is greater than that of [a

set of incomes with] the same average distributed more evenly." He proposes as the best method of giving effect to this principle "to divide the total gross assessed income by the total duty paid in respect of it and obtain a factor which will be low if there are many rich people and high if there are not." The reciprocal is then to be used as a multiplier for the totals (after they have undergone a certain adjustment).

Statistical methods principally are required for another of the problems discussed, to determine the value of land over a period of years. In bringing under our notice the extremely discrepant estimates of site value made by good authorities our author may have had in view the speculative difficulties connected with the subject which he has considered in his article on Land Values and other articles in the ECONOMIC JOURNAL.

National Capital would require only statistical methods for the measurement of its amount if capital consisted only of material objects, business fittings, machinery, or—with reference to the classes who do not pay income-tax—workmen's tools or costermongers' carts. And we are still in the region of objective statistics while we follow Mr. Stamp's acute disquisition on the "multiplier" proper to discover the total amount of property from the statistics of the estate duty. But what are we to say about the variation in the capital value of objects corresponding to changes in the rate of interest? In what sense has the value [of land] diminished from 2,000 millions in the 'seventies to perhaps 1,000 millions at the present time? The "Giffen method" does not take into account prospective increase of productivity; as pointed out by our author in the *Journal of the Royal Statistical Society* last year. Again, the Giffen method does not take account of non-tangible wealth, personal capital invested in doctors, teachers, and preachers. "A very real step forward in the national well-being may take place while the Giffen measurement is stationary." Then there is the value of *living capital*, estimated as some five times the value of dead capital by Professor Nicholson in a well-known article in the ECONOMIC JOURNAL for 1891 (on "Living Capital," *not* on "Strikes and Social Problems," as misprinted in the work before us). Mr. Stamp's comment on these refinements is characteristic. "Except as a warning that the Giffen valuation cannot give the full story of national welfare, these considerations of an ultimate character are of doubtful value in relation to the practical aims of that valuation, because they complicate and diffuse the ordinary issues."

So with respect to the "National Income" he seems to consider that the figures representing exchange value are "sufficiently stable and homogeneous . . . for all ordinary purposes"; while fully admitting the justice of Dr. Bowley's remark as to the difficulty of attaching a perfectly definite meaning to the term "total national income." As Mr. Stamp points out, "the marginal significance of £1 to a rich man is different from what it is to a poor man; therefore, it is fallacious to say that a service that is *rendered only to rich men* is equal to and exchangeable for *a service that is rendered only to poor men*, simply because each costs £1 in money." Very felicitous is Mr. Stamp's reply to the common objection that "when a rich man with £20,000 a year employs a secretary at £500, and the secretary employs a gardener at £50, it is fallacious to reckon the aggregate income at £20,550." But, replies Mr. Stamp, "the services of all three *exist* and are measured in money terms at these values. One might as reasonably say that there is only one Japanese box because all the smaller ones fit inside it one within the other." The part played by usage and convention in settling the denotation of the term "income" is thus happily illustrated: "We do not regard the 'annual value' of our furniture as part of our incomes, but if it were a general custom to hire furniture by the year . . . we should probably look at the matter differently. . . . If A at Reading lets his furnished house to B from Brighton, and takes a furnished house from C at Torquay, who in turn lives in B's house, the real position is not changed, and yet the taxed incomes go up by three rentals of furniture!" The passage recalls the acute remark made on an earlier page that one who rents a park or "beauty farm," which yields no produce beyond the satisfaction of looking at it, pays an income-tax under Schedule B, which is not a tax on profits, but akin to a carriage licence—a unique feature in the income-tax.

Such subtlety of thought is not often associated with a mastery of the details of office.

National Power and Prosperity: a Study of the Economic Causes of Modern Warfare. By CONRAD GILL, M.A., with an Introduction by GEORGE UNWIN, M.A. (London: T. Fisher Unwin. Pp. 181). 1917.

MERCANTILISM as it flourished in the past, as it survives in the present, and the trade policy by which it should be replaced in the future—such are the large topics on which Mr. Gill discourses

with learning and judgment. He adheres to what may be called the traditional English view as to the futility of the mercantile system. He would endorse Buckle's pithy statement of that view :—"The misconception of the true nature of barter was not only an immediate cause of war, but increased those feelings of national hatred by which war is encouraged." Those to whom this doctrine appears orthodox will be edified by Mr. Gill's discourse. But if there are any who hold with Schmoller that the mercantilists were more nearly right than Adam Smith, we fear that they will not be converted. If they believe not Adam Smith and the older authorities, neither will they be persuaded, though some good arguments are revived. The hardened Protectionist will hear once more unmoved that "very good grapes can be raised in Scotland"—at a price. This illustration is used to refute one of the four "fundamental mistakes" which Mr. Conrad Gill attributes to the mercantilists. We have only space to remark upon the last of these mistakes, the one which is said to be most operative at the present day. This is the doctrine "that the whole State is an organism of which Government and subjects are component parts." It must be admitted, we think, that such terms have been used, especially by German writers, to foster an inordinate kind of patriotism, a reprehensible pursuit of one's country's exclusive interests. But it may be doubted whether this aberration is due to an imperfect "abstract idea," as our author seems to imply, or can be corrected as if it were a logical fallacy. May it not be true, though said by a German, that there is something mystical in the relation between a person and his country? The conception belongs to the mysterious region of first principles, or axioms of conduct, in which we do not recognise our author as a guide. In that obscure sphere the short-cuts suggested by logical precision are not always safe. They are exposed to the danger which Mill indicates in his weighty observations upon the Principles of Definition: "We must take care not to discard any portion of the connotation which the word in however indistinct a manner previously carried with it." We are not satisfied that Mr. Conrad Gill has escaped this danger when, setting aside Plato and Aristotle, Hobbes and Hegel, as affected with the fundamental mistake of mercantilism, he lays down what we ought to think about the relation in question. He himself admits that the form of thought to which he objects "tends towards efficient government, encourages patriotism, public spirit, and self-sacrifice." Perhaps this spirit is not much encouraged by his own statement, that "there is

no welfare of the State apart from the welfare of the individuals who compose it." This statement is the direct contradictory of the sentiment expressed by Pericles when exhorting the Athenians to sacrifice themselves for their country. Was he making a "fundamental mistake"?

Perhaps Mr. Gill would have better employed his considerable logical acumen in avoiding the appearance of something like the fallacy which logicians designate Composition and Division. We refer to his argument "that there is little inducement for the citizens of the nation in their own interests to desire increased political power and expansion of territory." This would be true no doubt if the Cobdenite millennium prevailed universally. In such a world it might be no advantage to any nation to acquire harbours and coaling stations and military force as an insurance against invasion by Prussians or other mercantilists. But in the existing world it is not true "in Division," as the logicians say, that each nation has no interest in making such acquisitions. The pacifist doctrine has the peculiarity that it is only true if universally accepted. Suppose that it were adopted by a part of the world, and that several nations accordingly relaxed their military preparations and martial spirit. The cheap conquest of their territory might well prove a net advantage to some of the unconverted nations. No doubt Mr. Conrad Gill did not intend that his views should be adopted in this partial and unsymmetrical fashion. But we think that in order to escape misinterpretation he ought to have separated himself more clearly from Pacifists such as Mr. Norman Angell. Whereas his reasoning is often on a level with that of the *Great Illusion*; even down to the paradox that an indemnity "would seldom be an appreciable advantage to the people" (receiving it). With these reservations we cordially accept Mr. Conrad Gill's conclusion that "if the world were set free from the remnants of mercantilist ideas there would be comparatively little ground of dispute, and so little international jealousy that when disputes did arise the Governments would be disposed to appeal for their settlement to justice rather than to warfare."

Economics in the Light of War. By R. A. LEHFELDT. (Johannesburg: South African School of Mines; London: Wesley and Son. 1916. Pp. 56. 1*s*.)

MANY old truths respecting consumption and production are here placed in a new light. Professor Lehfeldt reminds us that

saving should not be indiscriminate, that there are "luxuries" which help to make life more beautiful, to carry on the tradition of "art, literature, science, charm of manners, devotion to ideals. . . ." If the choice lay between a hundred million work-people on the dead level of the comfortable commonplace and slave-owning Athens, who would choose the former? Fortunately, the choice is not limited to these alternatives. Rather, we trust that the great tradition of civilised life will move on, "floating as it were on the support of satisfied primitive needs."

While sympathising with the claims of labour, Professor Lehfeldt recognises the importance of the entrepreneur's functions, the inability of a syndicate of workers to run a business unless they are prepared "not only with commercial acumen and adaptability, but with a certain forethought and self-sacrifice." Pending the development of those faculties, some advance towards self-government may yet be made. "If in a factory hours of work, hygienic conditions, and the like were regulated by a committee of the men so that the employer's part was restricted to instructing them what work to do and paying them for it, the men would have somewhat more the feeling that it was their own business than at present." Governments, too, have been deficient in the faculty of "merchanting"; though in other respects the efficiency of corporate trading enterprises and that of private businesses of the same class are said to be nearly equal. "How to get the indispensable services of the merchant at a moderate cost and without the abuses so commonly associated is the most difficult problem of economic reform." It is suggested that governments and municipalities ought to accumulate capital instead of as now borrowing what they require. The war will probably "leave behind it a lesson that the State both can and ought to do far more than the nineteenth century thought right."

Some German Economic Writings About the War.

Das Geld im Kriege und Deutschland's financielle Rüstung. Von Dr. Franz Eulenberg, Professor an der Universität Leipzig. (Leipsic: Koehler. 1915. Pp. 55.)

Weltwirtschaft und Kriegwirtschaft. Von Professor Dr. Peter Heinrich Schmidt. (Zurich: Orell Füseli. 1915. Pp. 23.)

Geld und Kredit im Kriege. Von Dr. J. Jastrow, Professor an der Universität Berlin. (Jena: Fischer. 1915. Pp. 97.)

Deutschland's Volkswirtschaft nach dem Kriege. Von Dr. OTTO PRANGE. (Berlin: Putkammer und Mühlbrecht. 1915. Pp. 170.)

England und Wir. Von Dr. J. RIESSER, Präsident des Hansa-Bundes. (Leipsic: Hirzel. 1915. Pp. 114.)

Der Finanzbedarf des Reiches und seine Deckung nach dem Kriege. Von Professor Dr. PAUL MOMBERT. (Karlsruhe: G. Braun. 1916. Pp. 44.)

Bevölkerungspolitik nach dem Kriege. Von Dr. PAUL MOMBERT, Professor an der Universität Freiburg i. Br. (Tübingen: Mohr. 1916. Pp. 116.)

Uber den Wahnsinn der Handelsfeindseligkeit. Vortrag gehalten in Zurich. Von LUJO BRENTANO, Professor an der Universität München. (Munich: Reinhardt. 1916. Pp. 32.)

Das ganze deutsche Volk unser Schlachtruf und Kriegziel zum ersten August, 1916. Von LUJO BRENTANO, Professor an der Universität München. (Munich: Reinhardt. 1916. Pp. 22.)

Kriegssozialismus und Friedenssozialismus. Eine Beurteilung der gegenwärtigen Kriegs-Wirtschaftspolitik. Von Dr. ANDREAS VOIGT, Professor an der Universität Frankfurt a. M. (Leipsic: Deichert. 1916. Pp. 31.)

Fas est et ab hoste doceri. We may return the compliment which is paid by one of our authors when he acknowledges that but for his having obtained access to the ECONOMIC JOURNAL he would not have understood the financial measures adopted in this country on the outbreak of the war. Similarly, those of our readers who have an opportunity of consulting Professor Jastrow's treatise on money and credit in time of war may learn many particulars which, owing to the obstruction of the ordinary channels of information, have been unknown to or misunderstood by competent English writers on these subjects. For example, it has been erroneously stated with respect to the extraordinary or emergency levy on property which was imposed by the German Government in 1913 that not a penny was paid. Whereas according to Professor Jastrow the instalments were duly and punctually paid (50).[1]

Particulars of the sort just instanced could not be reproduced

[1] A numeral in brackets throughout this article refers to the page of the work which the context shows to be under consideration.

within our space. We can only hope to present general propositions, *aperçus*, or synoptic views. Seen through coloured glasses these views may have been; yet seen from points new to many of us, and nearer the objects than the points of view to which we are accustomed. The diversified observations and reflections which such a survey will present do not lend themselves to a methodical arrangement. We may introduce a certain degree of order by proceeding from the more to the less exact and positive kinds of knowledge, from the science of wealth to the philosophy of well-being.

We begin with the subject which of all those comprised in the most positive of the social sciences, namely, economics, is the one which admits of the most exact treatment, namely, money. We have before us at least three very high authorities on war finance. Dr. Riesser authentically describes financial arrangements of which he was a great part. Professor Jastrow shows reason to believe that the German war finance is not so absurd as some English critics would have us to believe. Thus, as to the much-derided *Darlehenkassen*, there is this much at least to be said in their favour: that comparatively little use has been made of them (as true now as when the author wrote). Alluding to the complicated structure of that loan fund, Professor Jastrow says cautiously, "I don't think that there is any part of the construction which is not adequately secured. And I am far from disputing that this complicated arrangement is most ingenious (*geistrich*). Still, I am glad that our credit system is not based upon mental endowments (*Geistesreichtum*), but on more tangible assets" (29). To the criticism of an English writer that there was no foundation for the German financial system but confidence in the success of their arms, Professor Jastrow replies proudly that the critic is right. "We wish," he says, "no other foundation for our economic life than the sure confidence that we shall weather (*bestehen*) this struggle. Our national credit in time of war is a main constituent of our faith in our country (*ganz principiell ist uns der Kredit Bestandtheil des Vertrauens zum Vaterlande*)" (53). The credit of the Reichsbank, in particular the confidence in the "coined credit" formed by its inconvertible notes, is thus explained. The outbreak of war which threatened by a sudden shock to overthrow credit, set loose psychical forces which counteracted that danger. "To the security of our credit system there conduced all the feelings of inspiring faith that we experienced in those days, the quiet cheerful courage of the young men leaving for the Front, the

tearless pride of the mother; the silent piety of the whole people. To appreciate the strength of credit one must appreciate the entire mentality (*Stimmung*) on which it rests" (7). Another well-documented and very luminous tract on the financial equipment of his country for the war was contributed by Professor Eulenberg at the beginning of 1915. Among the resources which he surveys, a prominent place is, of course, assigned to the national income and the national property (or capital, in Giffen's phrase). The amounts may easily be remembered by observing that they are of the same order as the corresponding quantities for the United Kingdom—absolutely and therefore less relatively to the population; the German income, say, about £2,100,000,000, a little less than ours, the property about £16,000,000,000, perhaps a little greater. We have not quite followed the plans by which the author proposes to render available some part of the national savings. He cannot be suspected, like some English Socialists, of conceiving that the national capital can be directly applied to the production of munitions. "The national property has only a potential or ideal value (*nur irrealen Wert*); it is fixed, and cannot be made liquid or circulating" (35).

That sparing is a great source of revenue is a lesson taught by many of our authors. Our own *Economist* could not more insistently deprecate expenditure on useless luxury. Alcohol, tobacco, perfumery, advertisements are mentioned among articles which could be spared—in short, all that a leading English writer on the relation of money to war describes as "futile frillings." The Germans early experienced that maximum prices were not adequate to secure economy combined with equity. The rich man might be able at the assigned price of corn, for instance, to feed not only himself but his pigs, while the poor man found himself in the condition which induced the Prodigal Son to think of returning home. But we are unable to add to the light which has been already thrown on this topic in the ECONOMIC JOURNAL, particularly in the volume for 1917 (p. 124) *et seq.*, since those of our authors who treat of rationing wrote before the more drastic forms of this practice were introduced.

That resources for war are to be obtained by abstention from ordinary consumption is an old doctrine, well taught long ago by Chalmers. But Chalmers and the still older economists were not equally successful in answering the question: On what terms shall the State appropriate the resources thus made available? by compulsory taxation, or by a loan with future compensation in the

form of interest? The older economists argued as if a war loan taken up by citizens were exactly on a par with a loan obtained from a foreign nation, or with the borrowings of an individual spendthrift. But the sacrifice of the future to the present which the analogy implies does not hold good, as Professor Pigou has lately pointed out (*cp.* ECONOMIC JOURNAL, Vol. XXVI. p. 225). But though the roots of the old doctrine are thus cut away, yet, strange to say, it still bears fruit; our experts still hold to the old maxim, so powerfully enunciated by Gladstone, that it is preferable to tax than to borrow. In fact, the old conclusion has been grafted on new premises; the tendency of loans to produce monetary inflation, the probability that the payment of interest will involve hardship to the poorer classes. This new reasoning commands our assent. Yet it is not so self-evident, not so securely established by universal consent, as not to stand in need of confirmation by comparison with the views of independent authorities. Now the German economists with few exceptions seem inclined to prefer borrowing to present taxation for purposes of war. Professor Eulenberg, himself no mean authority, refers, in confirmation of his own views, to Professor H. Dietzel, who might be described in our judgment as one of the acutest of living German economists. Professor Dietzel, in his tract entitled, *Kriegssteuern oder Kriegsanleihen?*, published in 1913, advocates war loans as preferable in general to war taxes. He rests his case largely on the disturbance to industry caused by heavy taxation—much the same ground as that upon which Leroy Beaulieu condemns MacCulloch's suggestion that the whole cost to England of the war of the French Revolution might well have been defrayed without borrowing, or the proposal made by a French politician after the Franco-German war that the whole of the indemnity should be discharged at once by one enormous levy. Dietzel's conclusion is no doubt untenable in all its generality, in virtue of those recent arguments to which we have referred and other practical considerations. But his arguments may well affect some questions of degree; whether, for instance, with reference to the colossal expenditure of the United Kingdom in the present war the proportion raised by present taxation, say, about 20 per cent. of the total expenditure, is so culpably deficient, compares so unfavourably with the proportion of 50 per cent. attained in some former wars, as our English authorities seem to take for granted. At least we are entitled to suspect arguments which leave out of account two essential factors: the degree in which the method adopted for raising the

loan produces monetary inflation, and the distribution of taxation for payment of interest compared with the proportions in which different classes of the community have taken up the loan. Suppose, for instance, as was true at the date when Professor Jastrow wrote, that half the German loans have been contributed by persons with less than £1,000 a year; if half the future taxation is raised from that section of the population and as far as possible from each stratum in proportion to the contribution which it made to the loans, where is the great, or rather where is the inequitable, hardship to the poorer classes—apart from the consequences of changes in the level of prices. It is fair to add, when appealing to the authority of the German economists, that they have more or less distinctly in view the possibility of covering the expenditure on war by indemnities levied on the conquered. "It is really superfluous," says Professor Eulenberg, "to trouble our heads beforehand about the matter"—the imposition of taxes for the payment of interest on the war loan—"since all must depend upon the indemnity" (34).

Taking for granted that the financing of the war will not begin till after the war, Professor Mombert inquires what the character of taxation should be—as to its general features, for it would be premature to discuss particular taxes. He has produced a disquisition which may be described as sound and creditable, but somewhat affected by the common fault of German economic writing, the tendency to dilate upon the obvious. Among more than forty pages of generalities we have found only two ideas which call for notice here. One of these seems not a very good idea, namely, the proposal to tax by preference raw material with a view to encourage economy in the use thereof (32). This proposal appears to us open to the objections which Leroy Beaulieu has directed against MacCulloch's theory that taxation induces manufacturers to be more efficient. MacCulloch was not indeed, if we remember rightly, referring to raw material so much as to later stages of production. But the objection is not quite parried by this circumstance. Leroy Beaulieu admits as against his case the instance on which Professor Mombert sets great store, namely, the encouragement to the production of beet-sugar incidentally caused by the virtual taxation of the raw material. But the instances adduced are not sufficient, thinks Leroy Beaulieu, to prove a general theory. Professor Mombert makes a second proposal which would have appeared to the older economists as heterodox as his first, but which is now becoming fashionable, the proposal to encourage the growth of population

The last subject is further considered by Professor Mombert in his treatise on the policy to be adopted with respect to the population question after the war. He elaborates a theory of population which in its broad lines may be regarded as coincident with that which Dr. Marshall has made familiar to the English reader; that in virtue of the law of increasing returns, increase of population is desirable, provided that it is not seriously counteracted by the law of diminishing returns—provided that, in our author's phrase, there is an adequate *Nahrungsspielraum*. Subject to this proviso, Dr. Mombert seems to desire increase of population for much the same reasons as the mercantilists of old. Like Bishop Berkeley, he wishes for a country full of inhabitants; but he perhaps differs from the Bishop in laying more stress upon power than on plenty as the aim of population policy. He would certainly give the answer which the Querist expected to the question: "Whether the public is more concerned in anything than the procreation of able citizens?" But the hint dropped by the speculative Bishop when he alludes to the breeding of Barb and Arab horses finds no echo in the sober counsels of the German statistician. No countenance is here given to the surmise that the docile German people will adopt some new variety of marriage-law calculated to repair the losses both in the number and in the quality of the population caused both by the direct loss of men in war and by the effect of that loss upon succeeding generations. Professor Mombert's recommendations are mainly based on the now generally accepted principle of equal sacrifice in taxation, that the burden should be lightened for those who have undertaken the charge of families. He makes several suggestions for carrying out this principle; for instance, that the increase of salary which now accrues to Government officials after a long term of service should come for those who have families at a time when the expense of bringing up a family presses most heavily (75). Again, married women should be more largely employed by the Government, particularly in education, their hours of work being reduced by a half, so as to permit of their attending to home duties (84). The additional cost involved in these arrangements is to fall on the unmarried.

For the purpose of staving off the law of diminishing returns and enlarging the *Nahrungsspielraum*, there are some proposals for increasing cultivation which might reward the attention of our legislators. He makes one suggestion which would hardly be expressed so openly by a writer of any other nationality, namely, that the German population, relatively to its rivals, should be augmented by taking territory from their enemies and adding

it to their own : " as we hope and expect as a consequence of the present war" (111). Hunger, he observes, referring to the historian Dahn, was the main motive of the barbarian invasions of the Roman Empire. "When people now in the present sanguinary conflict of nations speak of the German people's struggle for existence, this only means the fight for *Nahrungs-spielraum*" (56).

The matter is put more explicitly by Dr. Prange. Surveying the territory of Germany's great Eastern neighbour, he points out the proportions in which the fertile soil described as "black earth," abounds in Russia. How nice it would be, he says in effect (105), if Germany had some of that black earth. He quotes with approbation Jentsch, an author who flourished at the end of last century. "The Russian people is not competent to cultivate the enormous extent of land which it has occupied; we need this land, and if we possessed it would soon put it to its best use. We, as a nation, suffer from an hypertrophy of brain; we have an excess of intelligence, of talents (*Geistern*) which are suited for leading others, for conducting useful undertakings; an excess which if not employed runs into moral and political extravagances. The Russians, on the other hand, need strong, intelligent, faithful leading; it is as much a necessity to them as their daily bread; in fact, it is only by such leading that they can be certain of obtaining their bread. There are no two people on the earth that stand so mutually in need of each other. If ten million Germans flowed into Russia, both people would be benefited. . . . What prevents us? Is it reverence for Tsardom and its Bureaucracy? Has any brave people ever let itself be kept back by reverence for any kind of Majesty from getting for itself what it needed and to which it had a well-grounded claim? Were our German ancestors deterred by the reverence which they really felt for the Roman Empire, which was really deserved by the Empire, from sending their superabundant youth with mailed fist (*mit gewaffneter Hand*) beyond their boundaries and demanding land? . . . Barbarians were not afraid to break up (*aufzulösen*) a highly civilised, highly cultured (*um die Kultur hoch verdienter*) Empire, and shall we, who bring civilisation (*Kulturbringer*), shrink from the necessary expansion? (128) . . . Otherwise, alas! for our posterity, and well for the man who is childless" (134).

To the economist brooding upon the doctrines of Mill and Malthus there is here revealed a cause of war far deeper than the incidents upon which popular imagination fastens, the folly of

an emperor or the mistake of a diplomatist. Not even the change of heart which is properly preached as an essential condition for ensuing peace would alone suffice to annul this cause of war. Against an enemy minded as there is reason to believe ours is, what would it avail to follow the advice of our pacifists, as thus expressed by the ablest and most outspoken of them? "If the Germans, instead of being resisted by force of arms, had been passively permitted to establish themselves wherever they pleased, the halo of glory and courage surrounding the brutality of military success would have been absent, and public opinion in Germany would have rendered any oppression impossible. As between civilised nations, therefore, the principle of non-resistance would seem not only a distant religious ideal, but the course of practical wisdom" (The Honble. Bertrand Russell, *International Journal of Ethics*, January 1915, pp. 39–40).

It is a remarkable but hardly regrettable incident of our complicated nature that the virtues which war is apt to develop flourish, notwithstanding a taint of injustice in the originating cause of a war. Almost all our authors testify to the moral awakening which Germany has experienced; to the industry, thrift, patience, union of purpose and feeling, and other fruits of the spirit which patriotism, evoked by war, has promoted. A particularly striking and beautiful testimony to the loyalty of the German working classes is given by Professor Brentano in the brochure with which he inaugurated the second anniversary of the declaration of war (10). Many of our writers anticipate political changes in the direction of greater liberty. Dr. Sering elaborates a philosophical parallel between the *Kriegssozialismus* which has been brought about and the moral—as well as economic—condition of Fichte's "Closed Commercial State."

It is not to be supposed that the bulk of patriotic Germans are conscious of being "out" to take their neighbour's territory. Their state of mind is, no doubt, not so well represented by the passages which we have cited from Dr. Prange as by some earlier passages in which he describes England as having, in her own selfish interests, engineered the war on Germany. He traces the aggressive spirit of England from the time of Henry VIII. to that of Edward VII., with the aid first of Rogers and afterwards of his favourite author, Jentsch. These authors, especially the latter, are cited to show that England's boasted wealth was obtained, not by work and saving, but by robbery and exploitation. Why talk of the horrors of the Inquisition? The Spanish torture chambers cannot compare with the English factories (19).

The ill-treatment of the Irish and the exploitation of the American colonies are brought up against England. This enumeration of our country's misdeeds in the past affects us like the torrent of abuse which now, as in the days of Homer, may be heard in a back street poured forth by an angry scold—"partly true and partly false," as the poet who knew human nature so well observes through the mouth of his most sensible hero. It is always possible to attribute bad motives; for instance, to our conduct in the Napoleonic war, if with Dr. Prange we take our interpretation from Napoleon's utterances at St. Helena! (61).

Our readers may perhaps suppose that Dr. Prange—though a high authority on insurance and a very competent economist—cannot be taken as representative of German thought. But other better known writers adopt a similar tone with respect to the part played by England. One only of our authors, one whom we should describe as a man of light rather than of leading, Dr. Peter Schmidt, holds the balance pretty evenly between the rivals whose race for zones of influence led to this world-wide struggle for economic power, this *Weltwirtschaftkrieg*. That was the ultimate cause, he thinks; who put the last drop into the overfull vessel of wrath is angrily disputed. The better known Dr. Riesser is less moderate. In the manner of Dr. Prange he rakes up "old, unhappy, far-off things" to the disparagement of this country. Coming to recent times, he affirms that in the Boer War some 1,400 women and children, being put upon half rations in the notorious concentration camps, perished by a miserable death (*Man wüsste dass . . . England . . .* 528 *Frauen und* 866 *Kinder hatte jammervoll unkommen lassen*). He makes great play with the Belgian treaty of 1906 to the effect that "England . . . without violation of the neutrality of Belgium by Germany, and even without the consent of Belgium, would let her troops land in Belgium." Plunging into the negotiations before the war, Dr. Riesser emerges with the proof of Grey's shocking duplicity (*widerliches Doppelspiel*).

More sensibly Professor Brentano tells his Zurich audience not to be afraid of his troubling them with the contents of Blue, Red, Green, Yellow, Grey, or White Books. None of the belligerent nations, in his opinion, has reason to be proud of the services of their diplomatists. But as to the deeper causes of the war he fully believes in the "encircling policy" (*Einkreisungpolitik*) of Edward VII. (12, 22). He complains of the policy adopted by William III., which made England the tongue on the balance of European power (16). But surely William III.'s

promotion of the coalition against France admits of a more favourable construction than that it was merely a policy of encirclement in the interests of England. Even Mr. Bertrand Russell admits that we were justified in inclining the balance of power against Louis XIV. (*Social Reconstruction*).

Abominably as England has behaved, according to Professor Brentano, he yet warns his countrymen against prejudicing their commercial interests by the indulgence of hate. He well re-states the free-trade doctrine that the home country should not injure itself in order to spite the foreigner. Besides, trade wars lead to real wars. A tragic picture of the calamities caused by the war is reproduced from a contemporary publication. There is shown as in a vision an almost interminable procession, a column marching four abreast consisting of all the victims of the war; the dead, the wounded, the invalided, the imprisoned, the exiled, the famished, the bereaved. . . . The column, marching night and day, would take many weeks to pass. That small fraction of it which consists of the only sons (of all countries) killed in the war would take twenty-four hours to march past. Such being the horrors of war, and seeing that it is the tendency of trade boycott to produce war, how bad and mad are the resolutions adopted by the Conference of Paris last year!

These reflections appear to us in the main just. It is candid of the German professor to admit that "the trade policy to which Germany has been devoted for more than three decades has essentially contributed to produce an increasing following in England of that encircling policy of Edward VII. which was directed against the German trade policy" (22). "There is only one means," he finely says, "of assuaging hate and thereby obtaining peace, a durable peace: for the future to abandon all trade enmity and the means by which it is subserved" (23). It should be observed, however, that he has not quite done justice to the motives of those free-traders who took part in the Conference of Paris. The danger which they had in view was not the bogey of the common protectionist, not the action of normally competing merchants, but "dumping" or some other form of "penetration" engineered and subsidised by a hostile Government acting in monopolistic fashion, like a Trust when it "freezes out" its rivals. The impartial Fiscal Blue Book [Cd. 1761, p. 296], which was published in 1903, recognised this case as exceptionally dangerous, but had no evidence that the case then actually occurred. It will not be irrelevant here to mention another case in which resort to the weapons of economic

warfare may be justified. It may be used as the sanction of an international agreement such as that which has lately been proposed, under the title of *Enforced Peace*, by several distinguished American statesmen and philosophers, including President Wilson. "The signatories," so runs the programme, "shall use both their economic and military forces against any one of their number that goes to war or commits acts of hostility against another of the signatories before any question arising shall be submitted"—for discussion, as provided in the context.

Our German authors do not concern themselves about leagues of peace. But they make some suggestions bearing on a connected topic: the revision of international law. Professor Brentano insists strongly on the freedom of the seas, the immunity of merchant ships (not carrying contraband) from capture by an enemy. But he hardly realises the difficulty which an English patriot feels about entering into an agreement for this purpose with a Power so strong and so unscrupulous as Germany. The difficulty is well stated by Professor Muir in the current number of *Scientia*. This is not the place to discuss whether on this question we should side with those whom Professor Brentano describes as the inheritors of the mantle of Cobden and Bright, "men like Charles Trevelyan, Ramsay Macdonald, Arthur Ponsonby, and the distinguished English authoress, Vernon Lee," or rather with John Stuart Mill, regard the proposal as "the abandonment of our chief defensive weapon, the right to attack an enemy in his commerce" (*Times*, March 11, 1871). In this connection we ought also to mention Professor Jastrow's not intemperate protest against the prohibition instituted by the British Government of payments to "alien enemies." He admits that this is in accordance with English law, but he never expected that so bad a law would be carried out (45; cp. *Archiv für Soziale Wissenschaft*, 1916, *Kriegsheft* 4, p. 53, by the same writer).

These topics will not appear too remote from economics by those who recognise analogy between industrial disputes and international conflicts. The analogy is conspicuous in the programme of the American league to which we have referred. Its fundamental proposal is exactly parallel to a plan which is now becoming generally accepted with respect to industrial disputes; which is thus recommended by the Report of the Industrial Council, 1913 [Cd. 6952], "that there shall be no stoppage of work or alteration of the conditions of employment until the dispute has been investigated by some agreed tribunal and a pronouncement made upon it."

We could wish to have heard one of our authors, Professor Voigt, upon this topic. He has, however, chosen a different subject, pointing out with great ability as against Professor Jaffé (*cp.* ECONOMIC JOURNAL, Vol. XXV. p. 449) and other contemporary writers that the war has not introduced any essentially new economic principles, none that were not familiar to those who had studied the history of sieges and other periods of emergency. He would, no doubt, endorse Professor Pantaleoni's dictum that the war presents many recent, but not any new, economic phenomena. The transient phases of war socialism and war economics (*Kriegssozialismus*, *Kriegswirtschaftlehre*) will pass with the return of peace, some ordinary blend of individualism and governmental intervention succeeding.

The reason why we had wished to hear Professor Voigt on the subjects of industrial conciliation and international peace is that he is the one German author known to us who is conversant with the modern analysis which is applicable to transactions between self-interested parties, whether with or without competition. In fact, he independently struck out, as noticed in a former number of the ECONOMIC JOURNAL (Vol. IV. p. 202), a portion of that analysis which Professor Pigou has employed with success in his *Industrial Peace*. Some notion of this abstract doctrine—of its tendency to clarify intellects and cool animosities—may be gathered from the less severely abstract theory propounded by Professor J. B. Clark in *Scientia* (1916), referred to in the ECONOMIC JOURNAL, Vol. XXVI. p. 409.

Professor Clark, in the important contribution which he makes to the volume entitled *Industrial Peace*, makes an observation which is relevant to the present study. He does not look for the entrance of Germany in the near future, at least into the new league. "There would be very little coherence in any single body in which both the Teutons and the Western Powers were combined." The combination might be illustrated by "a temple of peace in which sticks of dynamite were inserted between courses of stone." But we are not precluded from hoping that even Germany might ultimately take this very modest step in the direction of minimising war. For this mere beginning of a better age would not mean Utopian abandonment of all wars, any more than the parallel industrial arrangement would preclude all strikes. Some strikes would be averted by the parties coming together and settling their differences by discussion. Strikes started without warning, as by workers in works of public service and utility, would be penalised. Analogously the potential

bloodless war which Mahan contemplates (*Armaments and Arbitration*, pp. 56, 64) would often take the place of actual fighting. Also, invaders who should steal a march on an unsuspecting neighbour would incur the hostility of the leagued nations. But this first step towards improved international relations might be adopted by a nation which believed that right rests ultimately on might, and that it is normal to seek aggrandisement by war. They would not renounce deliberate exercise of force. The barbarian invaders of the Roman Empire, who are so much admired by their modern descendants, would not have been permanently held back by such a treaty. The rivalry of Rome and Carthage might still have subsisted—with some mitigation probably—notwithstanding an agreement that before going to war the rivals should submit their differences to a council. The curse of the Carthaginian Queen—*nullus amor populis*—will, indeed, long rest upon the modern rivals. But we are not compelled to add : *nec fœdera sunto.*

After-War Problems. By the Earl of Cromer, Viscount Haldane, the Bishop of Exeter, Professor Alfred Marshall, and others. Edited by William Harbutt Dawson. (London : Allen and Unwin. Pp. 366. 7*s.* 6*d.* net). 1917.

This is a useful collection of contributions to the solution of problems which will become pressing after the restoration of peace. The number of separate essays—twenty in all, if we include the editor's stirring introduction—would of itself deter us from attempting to cover the ground evenly by detached remarks on each of the different subjects. Moreover, much of the ground lies beyond the range of the Economic Journal. We are thus constrained to select somewhat arbitrarily for special notice a few out of the many valuable articles in this collection. We must omit altogether the first division of the book, which deals with " Empire and Citizenship." Under the second head, " National Efficiency," passing over with reluctance Lord Haldane's treatise on " National Education " and other important papers, we first notice Professor S. J. Chapman's " State and Labour." Professor Chapman anticipates that the "crystallisation of the productive system in regulations and customs " which had set in before the war will have been modified by the experience obtained during the war. For example, " it ought not to be beyond the powers of organisation to fit in the employment of

women, under conditions suited to their powers, with the employment of men under different and less restricted conditions." Things will come out greatly changed from the furnace of war. Nevertheless, the State is bound to fulfil its undertakings to restore restrictions which prevailed before the war. The workpeople have a right to a status at least as good as those restrictions were intended to secure. But they may use that right as something to bargain with and thereby obtain conditions different from, but more advantageous than, the old ones. The State in dealing with the relations between employer and employed in the period of transition following the war must endeavour to prevent the economic system which has been forced by the strain of war to make itself plastic from hardening again into a rigid form. "Its habit has hitherto been that of the lobster—to grow a shell, discard it when it has become absolutely tight, and then grow another. The ideal to aim at is continuous plasticity under working agreements which can be modified as need arises, seeing that schemes suited to all the features of an unforeseen future cannot possibly be devised." One awkward factor to allow for will be price variations with consequent changes in real wages. "The obvious course is to provide some slide of wages with an agreed index of prices for a period." But there remains the question what should be the starting wage, what should be the real wage which it is agreed to keep constant while prices vary, Shall the basis be the terms which the wage-earner now enjoys, or his remuneration before the war?

Professor Chapman incidentally throws much light on a problem which is discussed *eo nomine* in the two following essays, "The Relations between Capital and Labour." On behalf of Labour Mr. G. H. Roberts, M.P., makes some large claims. Seeing that nothing is so demoralising to the worker as low and uncertain wages, "it should be made a misdemeanour for any person to take another into employment unless able and willing to pay a living wage." "The doctrine of *laissez-faire* must be interred beyond the possibility of resurrection." But the tone in which these demands are made is conciliatory. The writer does not pretend that all the faults have been on the side of the employing class in their disputes with the workpeople. He looks for some permanent plan for securing agreement between the parties, such as was suggested by the Industrial Council appointed in 1912. He separates himself from those mischievous persons who go about prophesying a widespread class warfare after the termination of national hostilities. "Having seen the son of the

well-to-do and the son of the labourer watching and fighting together in order that their country may remain great and its people free, I cannot think they will soon forget the comradeship that inspired them to common endeavour and sacrifice. . . ."

In a similar spirit, from the standpoint of Capital, the late Sir Benjamin Browne deprecates quarrels. "What we want is to try and somehow re-establish that trust between employers and workmen that has to a certain extent fallen into abeyance, but by no means altogether. . . ." "The two bodies ought to be organised, as most of them have been for some time, and they ought to meet together on a footing of absolute equality, and no stoppage ought to be allowed until every effort has been exhausted to make a friendly settlement." Some not obvious circumstances which should be taken into account in framing such a settlement are adduced by the experienced entrepreneur. Grant that in the case of a company where the amount of capital employed per workman is large a small sacrifice on the part of capital may materially benefit the workman; yet the case is very different when there is only £100 of capital or less per man employed. Again, the large profits of some businesses arrest attention from the fact that many others make either little or nothing. "When I came to Newcastle as an employer, in 1870, I had occasion to meet all the engineering employers of Newcastle and Gateshead. I have kept an account of these businesses, and I find that two-thirds of them have perished disastrously." Again, owing to the power of a long purse to surmount troubles, "drastic changes in the law, unexpected strikes, and all other sudden and violent measures," generally tend to give the large employer an advantage. The decline of the small employer is regarded by the writer as a national calamity.

An important contribution to National Efficiency is made by Mrs. Fawcett in her article on "The Position of Women in Economic Life." We shall attempt to summarise her arguments; compressing, but, we trust, not distorting, the solid contents of the article.

Women have been excluded from skilled industries for which they are capable by the action of trade unions. For instance, "seven or eight hundred women who were working linotype and monotype machines in Edinburgh in 1910 were doomed to industrial extinction as the result of the Typographical Society's strike." In the textile trades "stringent trade union rules prevent women from being taught to 'set' and 'tune' their machines.

They do not do it because they are not allowed to learn how to do it." The trade union spirit in the professions is even more exclusive. The long boycott of women medical students in Edinburgh University has only just now (1916) been brought to an end. The British Red Cross in the first months of the war refused all recognition to hospitals officered by medical women for foreign service. The Army Medical Department was at first equally exclusive. Now, indeed, women have won their way into the medical profession, but nearly every other profession is still closed to them in this country. There results an immense waste of a great national asset. "There is no waste so great as the waste of the powers and gifts of the human beings who make up the nation."

This exclusion from skilled trades and professions exercised by men has the result of inequitably lowering the remuneration of women. The inequity is glaring when being permitted to do the same work women receive less pay. "For clerical work the pay allowed by the Treasury for women is substantially lower than for men. When in 1916 the great rise of prices called for a bonus on the wages of the clerical staff in Government Departments, an extra 4*s*. was given to all the men from eighteen years old and upwards, but only 2*s*. a week to women." At an aircraft factory the employers tried to make girls sign an agreement to work at a flat rate of 8*d*. an hour. . . . "The men in the same factory were having 10*d*. 1*s*., and 1*s*. 2*d*. per hour; the women doing in most cases absolutely identical work." Many instances are given of women working for Government or in "controlled" establishments who are receiving wages insufficient to maintain them in efficiency—evidently (we infer) below the tandard of men's wages.

It cannot be maintained that the unequal treatment of women is justified by their inability to acquire skill or by the inferiority of their work. Those who make the first objection can never have heard Miss Marie Hall play the violin or Miss Fanny Davies the piano. "They can hardly even have seen a woman dancing on the tight-rope." As to the alleged inferiority of women's work, evidence to the contrary is furnished in abundance by the experience of munitions work. For instance, Sir William Beardmore, in his presidential address to the Iron and Steel Institute, 1916, recording the experience of his own firm, adduces cases in which "these girls in all cases produced more than double that by thoroughly trained mechanics—members of Trade Unions—working the same machines under the

same conditions." "In the turning of the shell body the actual output by girls, with the same machines and working under exactly the same conditions and for an equal number of hours, was quite double that by trained mechanics."

Nor can the unequal remuneration of women workers be justified by the allegation that they have homes provided by their parents and are working for "pocket-money wages." "There may be here and there a few young women who are working under these conditions, but it is not true of the mass." The recent researches made by the Fabian Women's Groups show that out of 2,410 cases of wage-earning women two-thirds are not only entirely self-supporting, but have others to maintain besides themselves.

The fact last stated meets an objection which the author dismisses somewhat contemptuously as "the old story of the men having dependents and the women none." From the Fabian statistics which Mrs. Fawcett cites we gather that in round numbers 1,000 wage-earning women, about 40 per cent. of the total under observation, were supporting over 1,550 persons (adults or children) either wholly or partially (over 600 wholly and over 950 partially). There were also 432, nearly 20 per cent. of the total, contributing to the upkeep of their own and other homes over and above the cost of their own board and living.

If women really do identical work for less pay, "it must end in the women monopolising the trade and the men being turned out of it or coming down to the women's rate of wages."

Thus on grounds of expediency as well as justice "women should get equal pay with men for equal results," as Captain Williams lately declared, speaking on behalf of the Board of Trade. In the words of Mr. J. H. Thomas, M.P.—one of the few that are free from that fear of the voter which makes cowards of most members of Parliament—"wherever women were doing the work of men they should be paid the same rates as men."

We do not feel competent to comment on the statements which we have attempted to summarise. We may perhaps assist the reader to test the strength of Mrs Fawcett's arguments by referring him to some variant statements upon the points at issue made by other high authorities on the subject. Such is the article in the *New Statesman* (for August 1st, 1914) in which Mrs. Sidney Webb argues that the principle of equal pay for equal work—that "abstract doctrine of the modern middle-class Feminist"—may lead to the unexpected result of one sex or the other being entirely excluded from a branch of industry. So

Miss Rathbone in the ECONOMIC JOURNAL (March 1917, p. 55 *et seq.*) treats as very serious the argument to which Mrs. Fawcett alludes as " the old story of men having dependents and women none." We may also refer to Professor Taussig's article on a " Minimum Wage for Women " in the *Quarterly Journal of Economics* (for May 1916, summarised in the ECONOMIC JOURNAL, September 1916).

We pass on to the problem of " Taxation After the War," treated by Dr. Marshall. He begins with an estimate that the revenue required after the war will certainly be more than twice as much as was required before the war, certainly more and possibly much more than £m.400 (we follow Dr. Marshall in the use of a notation which is convenient for those who have to think in millions). The next topic is " a search for the least detrimental distribution of the future heavy burden of taxation." The statement of the question affords some clue to the answer. For it is suggested, as we interpret, that the criterion of right distribution is, in Mill's phrase, " the mode by which least sacrifice is occasioned on the whole," rather than the alternative, but by no means identical, formula given by Mill and mostly adopted by his followers, the principle of equal sacrifice, " that each shall feel neither more nor less inconvenience from his share of the payment than every other person experiences from his " (Mill, *Political Economy*, Book V. chap. ii. § 2). To elicit from the second criterion a decided argument for progressive taxation requires assumptions as to the laws of sentience which are somewhat precarious, which seemed to Mill " too disputable altogether." Dr. Marshall is content merely to allude to the question whether as much personal hurt is caused by taking £1,000 from an income of £10,000 as by taking £20 from an income of £200. It is " a matter on which opinions differ," he says, and he goes on to affirm a proposition which does not depend on such precarious premisses; " the hurt caused by obtaining £1,000 of additional revenue by means of levies of £20 from each of fifty incomes of £200 is unquestionably greater than that caused by taking it from a single income of £10,000." Perhaps he would agree with us in accepting Professor Nicholson's judicial pronouncement on the issue between " minimum sacrifice " and " equal sacrifice " : that the former statement " seems more logical on the pure utilitarian theory; on grounds of formal justice the equality of sacrifice may be preferred " (*Principles*, Book. V chap. vii. § 3, note). At any rate, Dr. Marshall seems to secure the good and to

avoid the danger inherent in each of the doctrines. On the one hand, he would not exempt from taxation and the attendant sense of sacrifice even "the poorest class of genuine workers," even "those who apply practically the whole of a very small family income to good uses." They would thus "remain full free citizens with a direct interest in public finance." "But the greater part of what they contribute directly to the Exchequer should be returned to them indirectly by generous expenditure from public funds, imperial and local, for their special or even exclusive benefit." On the other hand, while recommending that the income tax should be more steeply graduated, with perhaps some increase in duties on inheritance, he would avoid the danger of discouraging the formation of capital. "The duty of each generation to those which are to follow is as urgent as that of the rich to consent to surrender a more than proportionate contribution from their incomes to the national purse; ethical considerations and those of high policy make alike for the preservation of capital."

In connection with the apportionment of taxation between the rich and the poor we may notice a certain "abstruse point." "If a great part of the revenue is derived from taxes on commodities consumed by the people, then either the standard of living of the people must be lowered or the taxes must ultimately be paid by their employers; therefore it must in the main fall on the income obtained from capital employed in business." This statement (which like most of our unavoidably curtailed quotations should be read with the context) seems more accurate than the statements of Adam Smith and Ricardo as to the consequences of taxes on the necessaries of workpeople.

We are reminded of another classical doctrine, one propounded by John Rae in the work so highly praised by Mill, when Professor Marshall suggests that "pleasure derived from a display of wealth can be made a source of revenue without considerably injuring those who are taxed." The affinity which is noticed between this principle and the taxation of advertisements likewise deserves consideration.

Taxes on imports are reserved for separate consideration. They have certain advantages. Under modern conditions commodities are more easily taxed when crossing the frontier than when produced at home. A great part of the burden may, in some special cases, be thrown on the foreigner. On the other hand a duty on any import tends to prejudice those who are engaged in production for export. And the arguments in favour of resort to

import taxes have generally to be discounted by the following weighty observation. " The experience of many centuries shows that a policy which will confer a considerable benefit on each of a compact group of traders or producers will often be made to appear to be in the interest of the nation; because the hurt wrought by it though very much greater in the aggregate than the gain resulting from it is so widely diffused that no set of people are moved to devote mind, time, and energy to making a special study of it. Its advocates speak with zeal and the authority of expert knowledge. But they are bad guides, even if unselfish and perfectly upright; for a policy that makes for their peculiar profit is invested in their eyes with a deceptive glamour."

Taxes on imports have been advocated as a source of revenue —revenue urgently required after the war. But the source is less abundant than is supposed. Even Germany (in 1913) derived only about 2*s.* per head of her population from taxes on finished goods of all kinds; and our exchequer will require about a hundred times as much as this per head after the war. It is not generally known that Germany's receipts from import duties on " raw materials for the purposes of industry " yielded almost the same amount as those on finished goods and more than four times as much as those on half-finished goods. Against the taxation of foreign half manufactured and even wholly manufactured goods for the purpose of revenue—or indeed for any other purpose—is to be set the weighty consideration that Britain owes much of her advantage as an exporter to the ease with which her manufacturers obtain such goods from all parts of the world.

Another purpose for which taxes on imports are recommended is to protect industries which have suffered from foreign competition. Dr. Marshall reminds us that the advantages of production on a large scale, as a means to which Protection is recommended, belong in the highest degree not to a single business, nor even a single industry, but to " a compact industrial district where the production of many correlated industries for sale at home and abroad work into one another's hands; thus getting what they need without obstruction."

With regard to dye and certain " chemical " and other industries in which Britain has been outpaced by Germany, " the best remedy is a voluntary association of British manufacturers and traders who have some special interest in the matter, and who unite their resources to set up the industry in full strength." " State laboratories and University laboratories subsidised by the State should be required to undertake suitable inquiries on behalf

of the industry." To meet the expenses thus incurred, " a small duty may reasonably be levied on imports which compete with the products of the new industry."

A heavy duty may be imposed on any of the articles which can be shown to be often " dumped " in the British market at an exceptionally low price for the express purpose of crushing the new industry. But there occurs to us here an observation made by the author in a somewhat different connection : " No good distinction has yet been found between malignant dumping and the practice of selling abroad occasionally at relatively low prices, which obtains in almost every British industry."

Again, in the matter of key metals, " new conditions seem to call for some departure from that liberal policy which has served Britain well in the past." But " the key metals of to-day are not those of a few years ago; and restrictive measures by taxation are a poor substitute for constructive energy which may outpace the Germans in finding out what will be the key metals of the coming generation."

The new requirements of national defence have also weakened some of the old arguments for the free importation of food; " some measure of protective policy in regard to necessary food supplies may need to be accepted as an insurance against disaster." The writer indicates some measures among which Protective duties are not conspicuous. He refers to Professor Naumann's conclusion that the progress of agriculture in Germany has been at about the same rate in recent years as under the more liberal Caprivi policy, and at least as great in duty-free countries as in those with Protective tariffs.

The topic is connected with imperial preference. Import duties from which the other parts of the Empire are exempted would have little effect. " If Empire grain is admitted free, and Argentine grain is not, then Argentine grain will oust Empire partially or wholly from other markets; and Britain will be supplied almost exclusively from the Empire at about the same prices as before." But if the Empire grain is taxed at a rate lower than that levied on other grain, Britain will make a valuable present to other parts of the Empire at great cost to herself. But this result, if unintended, is open to the remark that business transactions among relatives and friends are dangerous. Difficulties open out in every direction when specific details of plans for Preferential duties are considered closely. There are also some general objections of an " ethico-political " character. If Britain tries to turn victory to her own special benefit, if her

actions give colour to the charge that she organised the war in the interests of her own industry and trade, she will commit a fatal error. It was by proceeding on Machiavellian lines that Germany provoked the antagonism of the world. Lastly, if Britain should countenance the large schemes of Protection put forward in some quarters, "Britain would appear to abdicate her great place as ruler of India in India's interest."

The Value of Money. By B. M. ANDERSON, Jun., Ph.D., Assistant Professor of Economics, Harvard University. Author of *Social Value.* (New York: The Macmillan Co. 1917. Pp. 610.)

"THE theory of the value of money is a special case of the general theory of value. . . ."

"Value is not a ratio of exchange or 'purchasing power,' but is an absolute quantity prior to exchange. . . . ."

"Economic value is a *species* of the *genus*, *social value*, coordinate with legal value and moral value. . . ."

"The value of money, being a special case of economic value, is subject to the same general laws. . . ."

These propositions are taken from a summary in which the author recapitulates theorems propounded in the first two parts of his treatise, constituting about two-thirds of the entire work. Thirty-six articles are required to sum up the reformed economic faith. Or, rather, only the fundamental doctrines are set forth in this *confessio fidei.* On this basis is reared a superstructure of higher theory, culminating in a sublime topic, "the reconciliation of statics and dynamics."

We shall not attempt to sketch the imposing system as a whole. We shall direct attention to some important points, with respect to which we either dissent from the author or suspend our judgment.

Agreeing with Dr. Marshall as to the relation between cost of production and value,[1] we disagree from the following statements :—

"To the Austrian economists we owe a rational theory of costs. . . . Value causation comes ultimately, not from the side of supply, but from the side of demand. . . . 'The real cost doctrine of the Classical School has failed' . . . 'it is virtually only as a pecuniary doctrine, costs from the entrepreneur point of view,

[1] See *Principles of Economics* as to Cost of Production *passim*, and as to Mill, Book V. ch. iii. § 2, p. 339 note (6th ed.).

that the cost doctrine is met in modern theory. . . . Cost as conceived by Mill is a superficial pecuniary notion' " (Chap. III.).

Our attitude towards other pronouncements is more neutral. They produce no conviction, but they provoke no contradiction. We have no strong opinion about the relation of the individual to society—with what truth an "organic unity" may be predicated of minds. We do not deny that "absolute value" may be attributed to money in some intelligible sense. We have not carefully compared the doctrines of Wieser, Mises, and Schumpeter as to marginal utility. We do not feel qualified to pronounce on the distinction drawn by one of them between the "inner objective value of money" and the "outer objective value of money" (Chap. V.).

We are disposed to agree with the author's dictum that the ultimate test of scientific theory must be practice—the capacity to solve problems. But we are not convinced that the new theory of social value would come out well from the test. Consider the following questions. If the money incomes of a class be increased *ceteris paribus*, in what circumstances is it possible that they will buy *less* than before of certain commodities? Is it true that if a rise in the price of bread raises the marginal utility of money to the poorer classes, they may consume *more* bread.[1] Marginal utility as used by mathematical writers seems more adequate to resolve such knotty problems than the new refinements.

Fortunately on the flood of dialectics some stray facts are found floating. The particulars given about the ways of business seem to us more valuable than the general theories which they are intended to illustrate. Thus, after perusing the chapter (Chap. XXIII.) which deals with credit in general, we do not find ourselves much wiser. But the following chapter, which deals with credit in relation to bank assets and bank reserves, contains some interesting information. It appears that only a small portion of the assets held by American banks can be regarded as liquid. Only a very small portion consists of "commercial paper"; and of the rest not so much as might be supposed is immediately available. The following case is described as typical:—

"A New York bank is at present lending to a small manufacturer of automobile supplies about $30,000. Of this, about $10,000 is liquid, periodically covered by "bills receivable," and if the bills receivable should fail, in the period in question, to cover the $10,000, the bank would insist on a reduction of the

[1] See ECONOMIC JOURNAL, Vol. XXV. (1915) pp. 47, 61, 190, referring to Marshall (*Principles of Economics*, Book III. ch. vi. § 4), who refers to Giffen.

loan. The remaining $20,000, however, is not liquid. It was spent for non-movable equipment; the bank expects to renew the notes for this sum periodically, and is well aware that it could not force collection without bringing the business to a close—or else forcing the factory to get accommodation elsewhere."

Loans on the security of crops having a natural term may be considered liquid; loans on animals being fed for the market belong to the same category. But of the loans on the security of livestock fully two-thirds are to breeders and not feeders, and hence are not liquid. We accept the facts about bank assets on the writer's authority. We do not endorse his theory that the function of bank reserves is entirely "dynamic": "the static law of bank reserves is that none are needed."

The characteristics which we have attributed to the work as a whole are noticeable also in that part of the work to which we would direct the reader's special attention: Part II, in which the quantity theory of money formulated by Professor Irving Fisher is disputed. Here, too, the facts appear to us more important than the theory. The higher theory of statistics which deals with index numbers seems to be ignored when it is asked, with reference to "T," the denominator in Professor Fisher's expression for the price-level, "how does one sum up pounds of sugar, loaves of bread, tons of coal, yards of cloth, etc.?" "T" is equally increased by adding a hundred papers of pins, a hundred diamonds or a hundred newspapers"—and so forth.[1] While we differ from our author's statistical reasoning we are almost indifferent about the logical issues for which he contends hotly, the questions raised in passages such as the following:—

"Rapidity of circulation, whether of money or of goods, is not a causal factor independent of prices, but rather in part depends on prices" . . . "the first change in the situation may appear in prices themselves" (Chap. VI.). "Particular prices can and do rise without a *prior* increase in money, or bank deposits, or change in the volume of trade, or in velocity of money or deposits, and also without compensating fall in other particular prices." . . . "The *cause* is with the prices" (Chap. XV.).

The statement last cited refers to the following clean cut apophthegm:—

"Suppose we assume a combination of employers of maidservants which forces down the wages of maidservants from $20 to $10 per month. . . . The masters now have $10 a month each more to spend. . . . The maidservants now have $10 each less

[1] See on this and other points connected with the attack on Professor Fisher's theory *Currency and Finance in Time of War*. By the present writer.

to spend. . . . These last two changes exactly neutralise one another. The first change, in the price of domestic service, remains unneutralised. The general price-level is, then, lowered by a cause acting from outside the equation of exchange directly on prices."

Commenting on this example, our author well says "the equation is kept straight by a reduction in velocity." He had better have said no more. When he goes on to locate the cause of the fall in the price-level we are reminded of a reflection made by Jowett in a lecture on ecclesiastical history: "How much effort has been wasted in attempting to answer questions which ought never to have been asked!"

We come to something more tangible when Professor Anderson instances cases of barter which are not taken account of in the equation of exchange constructed by Professor Fisher. There is barter in its simplest form, expressed in advertisements of the type: "Wanted to trade a well-trained parrot for a violin." Again, there is the practice of taking as part payment for a new sewing-machine or automobile the similar thing which the buyer is discarding. A more important case of (virtual) barter is formed by the stock and produce exchanges, by means of which the use of money is greatly economised.

The omitted transactions appear to us to be of a magnitude which relieves the equation of exchange from the imputation, sometimes attributed to it, of being an identical proposition. On the other hand, the omissions are not so serious, but that they may be, so to speak, jumped in the inductive leap from the known to the unknown. A wider chasm is disclosed when it is alleged that the transactions which occasion the flow of (credit) money designated by M′ V′ are for the most part not of the kind contemplated, not of the species represented by items in the volume of business, T. The huge total of about a billion dollars, 200 million pounds, per day is said to be made up principally of cheques, drawn in the course of speculative sales and loans between brokers. A "morning loan" may occasion the creation of three or more cheques. "Cheques fly about recklessly in Wall Street, and men will turn over money many times if an eighth of 1 per cent. or less can stick by the way on a good sum" (Chap. XIX.). If this account of the ingredients which go to make up the monetary flow is accurate, it certainly seems *prima facie* that some alteration, not indeed in the principle, but in the details, of Professor Fisher's calculation is required. But our readers may be advised to suspend their judgment until they hear the other side.

Principles of Money and Banking. A Series of Selected Materials, with Explanatory Introductions, by HAROLD G. MOULTON. (Chicago: The University Press. 1916. Pp. 283 + 502.)

Readings in Money and Banking. Selected and adapted by CHESTER ARTHUR PHILLIPS. (New York: The Macmillan Co. 1916. Pp. 845.)

PROFESSOR MOULTON attempts to combine in one volume the uses of a formal text-book and of collateral readings. He appears to us to have obtained a large measure of success in this attempt. He has avoided what he calls the "dogmatic tendencies of the text-book method," ill-adapted to a dialectical subject such as political economy. Indeed, his experience as a teacher even leads him to think that a text-book had better not be used by students of these selections. He hopes to retain the suggestiveness of collateral readings without their usual bulkiness and admixture of irrelevant material. This advantage is obtained at a certain cost when it is necessary to "adapt," in our author's phrase, an extract from a classic. For example, with reference to "reasons for debasing the standard" we have a piece adapted from Hume consisting of three paragraphs. The last paragraph consists of the well-known passage in which it is said that "when money begins to flow in greater abundance everything takes on a new face . . . and even the farmer follows his plow (*sic*) with greater alacrity and attention." The first paragraph, referring to the "operations of the French king on the money," occurs in Hume's essay later by about a page than the passage about the new face.. The second paragraph in Professor Moulton's version is taken from one of Hume's notes. The editor has put together these *disjecta membra* very skilfully. He restores organic unity like the surgeon who welds together portions of a fractured bone with a piece of bone taken from some other part of the body. The loss of literary form is thus reduced to a minimum. It is fully compensated by the abundance of matter for which room is thus made.

It would be impossible here to illustrate adequately the variety of topics presented in this series of excerpts, which number nearly 400, occupying on an average each about two pages. We should mention particularly one subject to which our author directs special attention in his Introduction. He remarks that the discussion of banking is usually too much confined to such banks as create media of exchange in the form of notes and cheques. "Over-emphasis on the demand nature of the deposit has too frequently

been accompanied by an under-emphasis, if not a total ignoring, of the actual uses to which the funds borrowed on short time are devoted." Accordingly, several "readings" are adduced to illustrate the rôle played by the "investment banker" or financier in modern business. Under the head of "Investment Banking Institutions" savings banks (A) and investment banks or bond houses (B) are distinguished. Under heading A there are ranged thirteen pieces—the one on the *liquidity needed in savings bank investments* appeared to us particularly interesting. It seems to be the opinion of experts that every such bank should have a good percentage of its funds invested in readily convertible securities. The bond of business is of enormous magnitude. It appears that nearly $2,000,000,000 of bonds are marketed annually in the United States. A "bond" in this connection is well described by Theo. H. Price as an instrument of credit which "provides a means whereby the immobile or undeveloped assests of a deserving enterprise may be pledged to secure the money which should be used to extend still further the field of beneficent activity." "It is the gift of imagination and the quality of constructive optimism that differentiate the banker from the moneylender." "The great bankers control the water-gates through which the public money flows to irrigate the fields of industry."

In this connection we should like to have had the views of experts upon the corresponding institutions—whether or not called banks—in this country. But the author has not been able to find room for the banking systems of Europe. Foreign exchanges and the controversy as to the relation between the quantity of money and the level of prices have likewise been excluded by the limitations of space.

Professor Phillips's *Readings* are, in some respects, complementary to Professor Moulton's selections. Treating his topic somewhat less exhaustively, Professor Phillips is able to cover more ground. Thus the banking systems of several countries, Canada, England, Scotland, Germany, South American countries, form each a separate chapter, each chapter containing extracts from several authorities. Again, foreign exchange has a chapter to itself; a chapter consisting of sixteen excerpts. There is a symposium on the relation between money and general prices based on the proceedings of the American Economic Association, 1910. We may notice Professor Carver's acute remark that if an increased demand for agricultural products should be attended with an increase in the marginal cost of production, a larger

supply of money would be required. There is also a chapter on index-numbers, consisting of the article on that subject in Palgrave's Dictionary.

Professor Moulton, like Professor Phillips, has to make room for many things by omitting much. The omissions seem to have been made judiciously. Thus, with reference to the Federal Reserve system, Professor Sprague's article in the *Quarterly Journal of Economics* (1914) is cited with the omission of one section, that on "Clearing Functions," the one which can, perhaps, best be spared, as dealing with somewhat problematic questions relating to the future. It would be hard to say which author skips most skilfully. Thus, in the racy extracts from Eggleston's *Recollections as to the Confederate Currency*, both writers retain the statement that gold was at a 12,400 per cent. premium. Both reproduce the epigram, "Before the war I went to market with the money in my pocket and brought back my purchases in a basket; now I take the money in the basket and bring the things home in my pocket." But Professor Phillips omits the anecdote of the cavalry officer who inquired the price of a pair of boots. "Two hundred dollars," said the merchant. A five-hundred-dollar bill was produced, but the merchant could not change it. "Never mind," said the cavalier, "I'll take the boots anyhow. Keep the change." On the other hand, Professor Moulton does not include the physician, who would order from a planter whom he was visiting "ten or twenty visits' worth of corn." "The visits would be counted at ante-war rates, and the corn estimated by the same standard."

We hesitate which of the two versions to prefer; and more generally which of these useful complications most to recommend to students and teachers.

Rural Reconstruction in Ireland: a Record of Co-operative Organisation. By LIONEL SMITH-GORDON, M.A. (Oxon.), Librarian Co-operative Reference Library, Assistant Secretary Irish Agricultural Organisation Society; and LAWRENCE C. STAPLES, A.M., sometime Parker Travelling Fellow, Harvard University; with Preface by GEORGE W. RUSSELL ("A. E.") (London: P. S. King. 1917. Pp. 279.)

The National Being. By A. E. (GEORGE RUSSELL). (Dublin: Maunsel and Co. 1916. Pp. 176.)

MR. SMITH-GORDON and his coadjutor address a great variety of readers. The gospel of co-operation is preached not only to

Irish farmers; the labourers also may hope for benefit from co-operative stores. The landlords, too—or, rather, those who formerly enjoyed that position—are reminded that now that they have descended from that invidious position they are freer to take a leading part in the life of the country. Sir Horace Plunkett's remarkable pamphlet, *Noblesse Oblige*, is appositely cited: "New duties—or, I would rather call them, opportunities—are emerging from the present social revolution, which far exceed in interest and importance those appertaining to the former relation of landlord and tenant." Co-operation being non-political, it is particularly open to the resident gentry to take a lead in this movement. Again, Irish politicians are warned against an exaggerated belief in political remedies—an exaggeration typified by the anecdote of the peasant who ceased planting potatoes on hearing that a Home Rule Bill had become law. Nor is it only the Irish reader to whom this widely interesting work appeals. Co-operators everywhere will be confirmed in their faith by the records and reflections here presented. Economists whose belief in the peculiar efficacy of co-operation may have been shaken by sceptical arguments—such as those examined in a former number of the ECONOMIC JOURNAL (1898) by Professor Gide—will here obtain additional experience to set against abstract analysis. The lessons of experience are, indeed, more convincing because they are interpreted by general reasoning. Our authors would subscribe to Professor Pigou's explanation: "The form of Purchasers' Association may, in fact, utilise the altruistic motives alongside of the egoistic as a spur to industrial efficiency." With Professor Gide they would recgonise that man is not wholly egoistic. Yet they by no means underrate the force of egoistic motives, the need of self-help. They justly claim for the movement directed by the Irish Agricultural Organisation Society that it encourages voluntary effort and self-reliance. They wisely observe that the ultimate criterion of Irish land legislation is to be looked for in its effect on character. Co-operation forms a needed complement to legislation which might have resulted in a relaxation of effort.

In the opening sentence of the Preface contributed by "A. E." it is truly said: "This volume contains the most complete and accurate history of a movement which has come to be of the highest importance to Ireland." The early history of the movement had, indeed, been traced by other able hands; notably in the ECONOMIC JOURNAL by Professor Finlay (1896) and by Sir Horace Plunkett (1897). But in view of subsequent develop-

ments our authors' record of co-operative organisation is more complete. The origin and root-idea of the system having been exhibited, the various growth of the widely ramifying branches is next traced. Of these the most flourishing—the earliest and the most successful of those cultivated by Sir Horace Plunkett—consists of the creameries. Irish butter, which in the earlier 'eighties could be described as principally used for adulterating margarine, now rivals the products of Denmark. The turnover of the creameries in 1915 was almost £3½ millions. But in spite of their immense success the creameries have not entirely escaped the danger to which the " inveterate propensity to truck " exposes all forms of combination. " The creameries," we read, " are scarcely more free from competition in sale than they were at the beginning of the movement, for the unfortunate reason that they have not yet been convinced of the necessity of not competing with each other." The unreformed system of marketing still admits of every creamery competing with the rest in " cutting " prices. A peculiar disability under which the creameries labour is due to the falling off of the milk supply in winter consequent on the prevalence of grass farms. The remedy is the introduction of tillage suited to small dairy farms; a remedy which will perhaps be hastened by the war. The creameries sometimes combine with the work of dairying a function which belongs specifically to the agricultural societies—the collective purchase of agricultural requisites at a reasonable rate, with a guarantee of quality. The agricultural societies also suffer from the discontinuity of their activity. " The members of the society take little interest in its existence except at the particular season of the year when the requirements are bought." The remedy, which consists in increasing the range of articles which the society buys for its members, is hampered by the condition attached to the grant from the Development Commissioners, that societies for other than agricultural purposes should not be promoted or admitted to recognition. The difficulty thus caused has been partly turned by the Irish Agricultural Wholesale Society. Breaking through hostile rings of manufacturers, this society can boast that it has secured for the farmer a reduction of 50 per cent. in the price of guaranteed manures.

We cannot hope within our limited space to render intelligible to our readers the workings of the various societies, which the authors describe minutely yet clearly. Passing over the societies described as " miscellaneous," and the home industries, we shall advert only to the credit societies. These, in point of magnitude

and potential importance, deserve a foremost place; but in respect of actual success they rank low. Some improvement, indeed, under the auspices of the I.A.O.S. was made upon the old Loan Fund system which was inaugurated by Dean Swift, and on the more modern " trust auction." The latter method of borrowing consists in discounting a bill based on a fictitious sale. For example, " a farmer raised £10 on a cow by thus selling her to his son at an auction. Next day the same cow was sold by the son and bought by the father, so that £20 was raised on the one animal in two days." But the fair prospects of the credit societies have not matured; partly, according to our authors, owing to the adverse action pursued by the Department of Agriculture and Technical Instruction ever since 1907, when Sir Horace Plunkett was succeeded by another President. The Department is represented by our authors as continually thwarting the beneficent endeavours of the I.A.O.S. The traders influence the politicians; the politicians influence the Department; and the Department uses its influence to prejudice the cause of Co-operation. To that influence the authors ascribe in part the unsatisfactory financial condition of the I.A.O.S., which is far from being, as it ought to be, self-supporting.

Notwithstanding some gloomy signs, the authors take a cheerful view of the future. At least, their predictions are of a kind sometimes employed by the Hebrew seers when they prophesied blessings conditional on good conduct. If the creameries arrange their marketing properly, if the agricultural societies secure continuous activity, if the farmers support the I.A.O.S. financially and take an interest in the local societies, if co-operative stores for the benefit of the labourers are created, then indeed will be realised all the blessings which are expressed in the co-operative motto : " Better farming, better business, better life." One great improvement in Irish life will be the mitigation of sectarian and political animosity, a result already becoming visible. " On the Committee of the I.A.O.S. and of the individual societies Catholics and Protestants sit in friendly discussion. Sinn Feiners and Constitutionalists, Unionists and Home Rulers forget for the moment their embittered differences." At least, " the dividing facts of life are being relegated to their true position by the realisation of community of interest in the economic sphere."

For a fuller description of the better life, the reconstructed Irish civilisation, which is to spring from the principle of co-operation, we turn to the glowing pages of " A. E." His sublime

conception of national well-being is free from the taint of aggressive militarism. Independently originating an idea which had also occurred to William James, our author proposes to substitute for universal military service a sort of industrial conscription. "Suppose Ireland had through industrial conscription about fifty thousand young men every year at its disposal under a National Works Department." The benefits of discipline and obedience attributed to military service would be secured by labour conscription. The cost of beneficial public works would be reduced greatly. "National schools, picture galleries, public halls, libraries, and a thousand enterprises which now hang fire because at present labour for public service is the most expensive labour, all could be undertaken."

The new Irish civilisation is to be based on rural rather than urban industry. "The creation of a rural civilisation is the greatest need of our time." The picture of the future rural community is quite idyllic. "There will be, of course, a village hall with a library and gymnasium where the boys and girls will be made straight, athletic, and graceful. In the evenings, when the work of the day is done, if we went into the village hall we would find a dance going on, or perhaps a concert." Meanwhile, the Council of the Community might be discussing how best to lay out their abundant profits. "One might like to endow the village school with a chemical laboratory, another might want to decorate the village hall with reproductions of famous pictures, another might suggest removing all the hedges and planting the roadsides and lanes with gooseberry bushes, currant bushes, and fruit trees."

A new "Sweet Auburn" seems to be realised. We are, indeed, in the presence of a poet, one of those by whom "the world is wrought into sympathy" with new motives and ideals. The mere economist must recognise a creative force which transcends logical analysis. He will recall the feeling of Mill towards Carlyle. "I felt," says Mill, "that he was a poet and that I was not; that he was a man of intuition, which I was not." But Mill, while deeply influenced by Carlyle, did not surrender his own sturdy belief in the virtue of competition. We may follow the inspired author of *The National Being* with similar reservations. We need not accept the verbal inspiration of passages which seem to deprecate economic competition. "Our feebleness arises from economic individualism." "What really prevents an organic unity in Ireland is the economic individualism of our lives." "People compete against each other

and under-sell each other . . . stultify each other's efforts and reduce each other to wretchedness." We are not prepared to affirm with our author that "there never can be any progress in rural districts or any real prosperity without such farmers' organisations or guilds." Similar sweeping predictions have been made by high authorities as to co-operative industry. But these prophecies have failed, largely because they could be fulfilled in the spirit without being fulfilled in the letter. As Mr. L. L. Price has pointed out in his writings about Co-operation, its best parts can be grafted on to the wage system without tearing up that system by the roots. The spirit and essence of the co-operative ideals so beautifully imaged by the poet-economist will in the coming civilisation, we trust, be realised. But as to the form of the future economy, the words of another poet, reflecting on his own youthful prophecies, seem appropriate: the earth will be

> "Something other than the wildest modern guess of you and me."

Money, Its Connexion with Rising and Falling Prices. By EDWIN CANNAN, M.A., LL.D., Professor of Political Economy in the University of London. (London: P. S. King. 1918. Pp. 66. 2*s*. 6*d*. net.)

ORIGINALLY intended as a supplementary chapter of the author's *Wealth*, this little work grew under his hands, and became suitable for separate publication "with a title likely to make plain the application of its argument to present conditions." The writer aims at assisting the reader "to acquire some clear notion of what makes the value of money change." Professor Cannan has succeeded perfectly in this endeavour. The little book is a model of lucid exposition. In verification of this judgment we may refer to the felicitous illustration of index-numbers as used to measure variations in the level of general prices (p. 5). The parable is too long for insertion here, and its anecdotal charm would suffer by compression. Among the "clear notions" which are impressed with new force is the doctrine that, in J. S. Mill's words, "money is a commodity, and its value determined like that of other commodities." Professor Cannan makes some advance on the classical theory when he argues that the law restricting the use of silver as legal tender beyond £2 and that of bronze beyond 1*s*. "has nothing to do with the value of the silver and bronze coins" (p. 32). A notable contribution to

monetary theory is the proposition that when the coin is not convertible into free bullion, convertible notes may be issued in quantities as great as inconvertible notes, and with the same result.

"Convertibility of the note into coin is deprived of all its virtue where laws against melting and exportation of the coin are present and effective. Convertible notes can then be issued without check, just like inconvertible notes, and consequently can drag down the value of money below that of the bullion contents of the coin, and give rise to the same phenomenon—a rise of general prices, including the price of bullion" (p. 54).

Professor Cannan's modesty finds traces of this theorem in Ricardo, but we think that it is largely due to his own originality.

Considered as a clear restatement of first principles, with some novel deductions, the work leaves no room for improvement or criticism. But with reference to the avowed purpose of application to present conditions it might be well to advert to the wide distance which in political economy separates principle from practice. The application which the general reader will probably make is to the question whether "inflation" can be affirmed of present monetary conditions. He will understand the term in some such sense as Professor Pigou (ECONOMIC JOURNAL, 1917) has assisted us to define: say a rise of general prices due to inexpedient and culpable action on the part of Government with respect to the monetary and banking system. Now the culpability may be reduced by a circumstance which Professor Cannan has well described, namely, the depreciation of gold in consequence of its extrusion from monetary use in belligerent countries (p. 24). In view of this circumstance it seems probable that only a fraction of the rise in prices in any particular country, say our own, is due to the action of its Government. All the blame which may be deserved by Governments collectively must not be fastened on any particular Government. In matters of international rivalry, what is true in *composition*, as the logicians say, is not equally true in *division*. In further excuse for the Government's action may be noticed a point of theory which Professor Cannan, properly intent on the larger generalisations, has not emphasised. He well says:

"The value of a precious metal is dependent on just the same things as the value of any other metal" (p. 10); "the value of the metal is determined in the same way as that of other commodities by the same kinds of influences acting on demand and supply" (p. 25); "the value of money is not an anomalous or

even very peculiar thing but depends in the same way as the value of other commodities upon the various influences which affect demand and supply " (p. 63).

It might have been well to add that, besides the generic resemblance between the value of metallic money and other commodities, there is also a specific difference. There is the tendency of value to be inversely proportional to quantity; a tendency modified by changes in the " rapidity " with which money circulates, or goods change hands. Now a modification of this kind may be relevant to the present inquiry; if, for instance, we surmise with Professor Lehfeldt (ECONOMIC JOURNAL, 1918, p. 111) that the present rise of prices is partly due to a diminution in the frequency with which each piece of goods (including services) on an average changes hands. An estimate of the amount of currency which might be required to keep prices stable (regard being had to the increased activity of industry and the monetary requirements of the Army) would be baffled by the change in rapidity. Yet another point of theory deserves notice in this connection. It is true enough for the purpose of an outline to affirm, with Professor Cannan, " we do not measure, and we do not want to measure, value in labour cost of production "; to deny that " value can and must properly be measured in labour cost of production instead of in commodities and services " (p. 57). But for some purposes, we submit, it is proper to define the change in the value of money by relation to difficulty of procuring it, rather than the amount of commodities and services which it will procure. We hold with Professor Marshall that there is a " *real* " value of gold measured by its power of purchasing, not commodities, but labour (Precious Metals Commission, 1887, Q. 9625). " A person who borrows a peck of green peas in April and returns two pecks in June . . . has not even returned the corpus of the loan " (Indian Currency Committee, 1899, Q. 11,765). A currency allowed to increase on the ground that labour was less productive—things more difficult of attainment in consequence of impediments to transport, dislocation of industry, and other incidents of war—might perhaps be described in a phrase stigmatised by Professor Cannan as " issued in response to a general demand." As observed by Mr. William Shaw (*Quarterly Review*, January 1919), " if prices rise and the volume of the currency media remain stationary, there will be a currency pinch or hunger." May we add with Mr. Shaw, " with a restricted currency the immense credit operations of the present war could not have been safely carried through "? If

some rise of prices in sympathy with the dearth incident to war is proper, if the right mean is difficult even to define and still harder to realise, there is some defence for inclining towards that extreme which at least offers the advantage of obtaining necessary resources without delay or hitch. The economist in his study quite properly elaborates counsels of perfection; as Ricardo argued against the practice of borrowing to meet the expenses of war. But some allowance may be made for the statesman who, intent upon obtaining resources necessary for the preservation of his country, is tempted to act upon the maxim, "rem, si possis recte, si non quocunque modo rem." Professor Cannan's work is a valuable aid to the fulfilment of the *first* precept.

ΣΥΣΤΗΜΑ ΔΗΜΟΣΙΑΣ ΟΙΚΟΝΟΜΙΚΗΣ ΤΟΜΟΣ Α΄, ΜΕΡΟΣ Β΄. ΙΣΤΟΡΙΑ ΤΗΣ ΕΛΛΗΝΙΚΗΣ ΔΗΜΟΣΙΑΣ ΟΙΚΟΝΟΜΙΑΣ ΑΠΟ ΤΩΝ ΗΡΩΙΚΟΝ ΧΡΟΝΩΝ ΜΕΧΡΙ ΤΗΣ ΣΥΣΤΑΣΕΩΣ ΤΟΥ ΕΛΛΗΝΙΚΟΥ ΒΑΣΙΛΕΙΟΥ. ΥΠΟ ΑΝΔΡΕΟΥ ΜΙΧ. ΑΝΔΡΕΑΔΟΥ. (Athens: 1918.)

THE study of economic history has been aptly compared to the investigation of geologic fossils. The scrutiny of primitive forms throws light on recent developments, alike in biology and political economy. Indeed, the economic fossils are the more interesting, in so far as similar types are apt to recur. Of evolution in economic doctrine it is particularly true that

"The course of time will swerve,
Crook and turn upon itself in many a backward winding curve."

The pterodactyl and the ichthyosaurus will not again appear on earth; but the prejudice against interest, the postulate that prices should be "just," and other ancient or mediæval dogmas seem continually to revive. Many are the parallels which Professor Andréadès has drawn between the economic institutions of ancient Greece and those of modern Europe. Even in heroic times the duties of the people to their chief have some analogy with the burdens of the modern taxpayer. The obligation of military service sometimes took the form adopted in Belgium (before the war), according to which one member of a family was selected by lot to serve as a soldier. Exemption from what we should now call Conscription could sometimes then, as till recently in some countries, be obtained by purchase. The wealthy Echepolus, who procured abstention from the Trojan

War by presenting a fine mare to Agamemnon, is the prototype of modern shirkers.

The archaic institutions of Sparta also afford interesting analogies. The curiosity which the manners of this wonderful people excite justifies Professor Andréadès in digressing from his strictly economic theme into a wider survey of the Spartan polity. Of the historians who, from Xenophon to Grote, have extolled or disparaged the Spartan regime few have treated the subject with such freedom from partiality and prejudice as the modern Athenian. As regards the economic character of the people, there appears no reason to question the verdict of Aristotle, that the system had made the State impecunious and the citizens avaricious. The decline of population which proved the ruin of Sparta was due partly to the " positive check " imposed by war, but largely to what Malthus might have described as a " moral check," the fear of bringing into the world children destined to be pauperised.

Outside Lacedæmon the rise of tyrants in many Greek cities claims the attention of the economic historian. Like the Medicis and the Napoleons, the ancient tyrants were expensive; they spent much on public buildings and on war. The ancient writers dwell at more length than modern parallels seem to require on the personal extravagance of the despots, and on their anxiety to keep the citizens occupied so as to deter them from hatching conspiracies.

Taking a general view of the fiscal systems prevalent among the Greek republics, Professor Andréadès attributes serious consequences to their generally too narrow basis of taxation. Hence the pecuniary straits in which they were continually involved; hence the resort to expedients which violated the independence of the citizen and sacrificed the individual to the State.

These features are most distinctly seen in the economy of ancient Athens. There the consequences of Socialistic taxation are clearly exhibited. Of course, in pointing the moral for use at the present time we must bear in mind the so-called " relativity " of economic truth, or, rather, policy. A levy on property in a small city was less liable to be evaded than, say, the property tax in the United States. A curious difference between the working of a levy on capital in ancient as compared with modern times, results from the high rate of interest then prevalent. A large percentage of the capital could then be paid out of interest without trenching on the capital. Again, the burdens borne by the wealthier citizens had often the appearance at least of being

undertaken voluntarily. Notwithstanding these points of contrast, we doubt not that in a comparison between the attacks on property prevalent in the Greek republics and those with which we are now threatened the similarities are more important than the differences. Our philosophic historian agrees with the wisest of the ancients that the exploitation of the propertied classes led to the impoverishment of the people as a whole. This is a true saying which Lycias puts into the mouth of a rich client: "By making me poor you will injure yourselves." But the desire for immediate gain and the passion for levelling down prevailed with the many. Our author appears right in attributing to this cause largely the downfall of the Athenian democracy—"the noblest of the peoples recorded in history."

The finances of the Byzantine Empire are next considered. But we shall not now enter on this subject, as it is not completed in the present volume. We might have expected that the economy of Athens would be followed by that of the Macedonian Empire and the so-called Hellenistic period. But the author has seen fit to defer these portions of his history to a subsequent volume. It must be remembered that the present volume has the character of a fragment. It is, as set forth in the title, the second part of the first volume. Following high precedents, for instance that of Professor W. R. Scott—not to mention Homer—Professor Andréadès hurries his reader *in medias res*. The justification of the order adopted will be apparent when the work is published as a whole. Along with that consummation a translation into one or more modern languages is promised. We trust that English will be one of those languages. Our literature will be greatly enriched by acquiring the work of one who combines in a remarkable degree the often dissociated qualities of economic insight and historical research. He not only arranges economic fossils and explains their significance; he also searches for and finds new specimens.

Gold Prices and the Witwatersrand. By R. A. LEHFELDT. D.Sc. (London: King. 1919. Pp. 130.)

PROFESSOR LEHFELDT brings to the study of gold and prices two qualifications which are rare in their combination: a powerful grasp of monetary theory and a practical acquaintance with the conditions of gold mining. With peculiar force and authority he discourses upon the stock of gold which constitutes

the supply of money, the requirements of commerce which form the demand for money, and the level of prices which results from the play of supply and demand. He verifies his theories by an historical retrospect, and applies them to the problems of the future.

The stock of gold in the world (excluding India and China) was almost stationary in the early 'forties of the nineteenth century. Then under the influence of increased annual production the stock continued to rise until the 'eighties. Again it became nearly stationary, and again it bounded upwards, reaching £1,000,000,000 in 1901 and nearly £1,500,000,000 in 1916. Meantime the demand for gold continued to increase with the progress of trade and industry. The rate of this progress is ingeniously measured by Professor Lehfeldt. He observes the annual rate of increase in the production of several commodities for which accurate data are available—meat, corn, tea, sugar, etc.—ranging from 1 per cent. to nearly 5 per cent. per annum. He takes as an inferior limit to the true rate the growth of population (say 1½ to 2 per cent.), which is certainly slower than that of goods throughout the world; and as a superior limit the rate of increase calculated by Professor Irving Fisher for prosperous America (nearly 5 per cent.). From all which he concludes that the true rate of progress is not very different from 3 per cent. That would be the rate at which the stock of gold should have increased in order to keep pace with the volume of business, if the currency had been entirely metallic, and gold had been the only precious metal. But silver played an important part in the period under review. And the demand for precious metal was modified by "paper substitutes." Account must be taken of the "currency factor," defined as the currency actually used by the public of a country (exclusive of bank reserves) divided by the stock of gold in that country. And other factors there are affecting the demand for gold money; in particular the frequency with which either the same goods are sold, or the same money changes hands. Balancing all the factors, Professor Lehfeldt reaches the remarkable conclusion that "the quantity theory of money, as it would be if there were no money but gold, is but slightly modified by the circumstances of the modern commercial world." Equally accurate statements about monetary phenomena are not available in the course of a great war. "In peace time it is safe to say that considerable changes in price-level are due principally to monetary changes." But war introduces another cause of the first magnitude, difficulty of pro-

duction. No doubt " a great deal " of the present rise in prices is " due to inflation of the currency." But " it is too soon to make a quantitative estimate of the inflation due to the War." After the War it is not to be expected, thinks Professor Lehfeldt, that Government will resort to heroic measures for the reduction of inflation, such as contracting loans whereby to redeem paper currency. He looks, rather, for the growth of production up to the level of the inflated currency. At the rate of increase which he found for the trade and industry of the world, namely, about 3 per cent. per annum, it would take fourteen years for demand to overtake supply of currency in such wise as to restore prices to their old level. This desirable consummation might be delayed by an undue output of gold. As the mines of the Witwatersrand —from which nearly half the world's annual supply of gold is raised—are fairly prosperous, it might be to the interest of owners to greatly increase their output. But what might be the interest of each would not be the advantage of all, not that of the Government or of the world. Accordingly, Professor Lehfeldt recommends an international control of output. It would be sufficient that the four nations within whose territories are the principal gold mines should agree as to the control of those mines.

To attempt to improve on Professor Lehfeldt's monetary theory would be like gilding refined gold. The following reservations are submitted rather as alloy to his pure science. First, we suggest a definition of a leading term which is less distinct, but perhaps not less appropriate, than the definition adopted by our author. By " velocity of circulation," he says, " is meant the average number of times the money passes from one ownership to another in a year." In thus introducing the unit of time Professor Lehfeldt is in accord with very high authorities on the science of money, Jevons and Professor Irving Fisher. Yet it may be questioned whether they effected an improvement on Mill's [1] definition, which was intended to " point attention to the quantity of work done, without suggesting the idea of estimating it by time." We shall be pardoned perhaps if we recite an old anecdote for the purpose of illustrating a point which may not be familiar to some readers. Tommy and Harry were taking a cask of beer to the Derby with the intention of retailing its contents at *6d.* per glass, the proceeds to be divided between the two partners. On the way, Tommy, becoming thirsty, proposed to purchase a glass for his own consumption. He had not, indeed,

[1] *Political Economy*, Book III. ch. viii. § 3. The point at issue has been considered by the present writer in his lecture on " Currency and Finance," 1917.

the price of a glass; he had only a threepenny-bit. But he pointed out that if he handed this coin to Harry he, Harry, would be as well off as if the glass of beer had been sold to an outsider. Harry assented, the more readily as his pockets were empty. Presently Harry became thirsty; and the threepenny-bit again changed hands, in exchange for a half-glass of beer. In short, the nimble coin circulated with such efficiency that the entire contents of the cask were bought and sold before the end of the journey. Now who does not see that the point of the story does not depend on the duration of the journey? The moral would be the same whether the partners travelled by express train or in a donkey cart. To be sure, it comes to the same if, after defining the velocity of money with respect to the time, we also define the quantity of business or traffic—of "work done," in Mill's phrase—with respect to the time. Yet, why drag in the time? It is less usual, we believe, to drag it in with respect to that rapidity which is symmetrical with the velocity of currency, namely, the frequency with which the same goods are sold. Thus Professor Lehfeldt writes: "A piece of iron ore in the ground is eventually converted to a razor; how many sales are involved before the transformation is complete?" The answer to this question has little to do with the time occupied. Apropos of this second species of rapidity, we may recall Professor Lehfeldt's brilliant suggestion (made in the ECONOMIC JOURNAL for 1918, p. 111) that a considerable change in this factor may have contributed to falsify the interpretation of monetary phenomena during the war. He now dwells upon another incident, the great increase in difficulty of production caused by the war. We surmise that there is something common to these two factors considered as disturbing monetary calculations. They both form large unique causes, deficient in that character of *sporadic independence* which is essential to the theory of Probabilities, which underlies the construction of index-numbers, which are required for the determination of changes in the level of prices and the volume of production. We hazard a further conjecture as to the reason why the catastrophic incidents of a great war are less amenable to scientific treatment. They have not, like the gradual growths of peace, the advantages of that deep first principle associated by mathematicians with the name of Taylor, according to which, when one quantity is dependent on another, small changes in the latter are apt to be attended with *proportionate* changes in the former. Thus if y, the level of prices, varies with x, the quantity of money, Δx, a small increment of the latter,

being attended by Δy, a small increment of the former, it may be expected that if Δx is doubled or increased by any not very large percentage; the corresponding increment Δy will, other things remaining unchanged, be increased by about the same percentage, whereas nothing like this can be predicated of the total quantities x and y. In this respect a considerable (or "integral") change in quantity x is a datum of less scientific worth than a small ("differential") change. For these reasons we are inclined to doubt whether it will be ever possible to make —what Professor Lehfeldt admits that it is "too soon" to make —"a quantitative estimate of the inflation due to the War." It need hardly be added that the fine issues here raised nowise affect the main arguments and practical conclusions of Professor Lehfeldt's masterly treatise.

The History of Trade Unionism. By SIDNEY and BEATRICE WEBB. Revised Edition. Extended to 1920. (London : Longmans, Green & Co. 1920. Pp. 763.)

THIS work comprises a revised version and a continuation of the History which was published in 1894. The reviewer of the first edition pronounced that the high reputation which the authors had already won independently of each other was sustained by their co-operation—then a new phenomenon. The second edition sustains a still higher reputation : that which has been earned by the collaboration of the well-matched consorts in many works of research and reflection during more than a quarter of a century.

In the new portion of the present volume, as well as in that which is reproduced, we admire the literary skill which has constructed a clear and impressive narrative from materials that are often deficient in personal interest and striking incident. The collection of recent facts does not, indeed, display the writers' talent for historical research so signally as did the earlier History. But if the task is less difficult, it is not less useful. It is convenient to have clear and succinct summaries of occurrences which though they have passed before our eyes, dwell confusedly in our memories. We may instance the enumeration of the various occasions on which Trade Unionism has been recognised and employed by Government since the outbreak of the War, or the description of the so-called "black-coated proletariat" who are joining the ranks of the trade unionists. The recent history is

often supplemented by information and reflections contained in previous writings to which a reference is given by the authors. Witness the elaborate study on "Professional Associations,' which appeared in the *New Statesman* of September 25 and October 2, 1915; April 21 and 28, 1917.

Nor is antiquarian research wanting in the additions to the volume. The authors have utilised some Home Office papers relating to the early part of the nineteenth century, which have become available since the publication of their first edition. Thus, they have traced the "Trades Union" movement of the 'thirties back to the "General Union" which existed in 1818.

For our part, we are grateful, not only for the additions to the original work, but also for the retention of passages such as those relating to Owen who, it is confessed, from the point of view of the practical statesman, "showed himself something of a simpleton." When it is recorded that he expected the "New Moral World" to be established within six months, competition to be abolished and the change from the capitalist system to a complete organisation of industry to "come suddenly upon society like a thief in the night," these things might almost seem to have been written for an example to hotheads of the present generation.

More explicitly in the newer part of the volume, the authors dissent from the extreme sect who would place the entire management of business in the hands of associated producers. "This conception seems to us," they say, "too one-sided to be adopted in its entirety, or to be successful if it were so adopted." In this connection there should be consulted one of the previous writings to which the authors refer: *What Syndicalism Means*, by S. and B. Webb, 1912. We regret that this instructive brochure is not more widely known and read. It is accessible only—so far as we have observed—in a French translation which is to be found in the Library of the British Museum, under the title "Examen de la Doctrine Syndicaliste." The danger of producers abusing their monopoly to the detriment of consumers is exhibited here more fully than in the History. Life, we are reminded, is not all production. "A great part of the most precious services that we render to the world, even during our working years, has nothing to do with the production of wealth properly so called"—such as the education of children, the cultivation of the mind, the works of art. Inventors and artists do not always run well in harness. The folly of the "general strike," the tendency of "sabotage" to degrade the character, the impossibility of abolishing wages, otherwise than in name—these and other salutary

truths are taught more persuasively here than in treatises which might be suspected of "capitalist" proclivities.

This criticism of thoroughgoing syndicalism was not demanded in a history of (English) Trade Unionism. That it is not repeated at full length does not argue any *suppressio veri*. But there is one omission which is characteristic and, we fear, designed. We desiderate some allusion to the important truth which Dr. Marshall has lately expressed in these words: "Even the most advanced schemes for National Guilds, seem to ignore the fact that the State has been a borrower rather than an accumulator of capital: and to take little account of the superhuman ability required on the part of those persons in whom the chief functions of 'The State' are to be concentrated when called on by a guild to advance more capital in order to replace some that has been lost in an ill-fated venture, or to enable some new venture to be put through" (*Industry and Trade*, p. 65, and context). He who is impressed with this truth will not be in such a hurry as our authors to bring about what they tell us is "the object and purpose of the workers organised vocationally . . . and politically . . . namely, a reconstruction of society by the elimination from the nation's industries and services of the Capitalist Profit-Maker."

The historian can hardly be expected to put a favourable construction on the doings of a class which he wishes to eliminate. Our authors in their account of the great battles which Trade Unionism has fought in recent times—over the Taff Vale case and the Osborne case and in the great Railway Strike—are naturally not very kind to the faults of the Capitalist party. They shower disparaging terms upon the judges and rulers concerned in these transactions—"quibbling," "evasions," "equivocation," "flagrant unfairness," "heat and prejudice," "animus and partiality," "amazing degree of class bias." . . . We dare say that some of these terms are applicable; but we should be surprised if it proved that they were justly applicable only on the one side, as our authors leave us to suppose.

We recognise that the interpretation of human action involves an element of hypothesis. Acts can hardly be recorded in a literary form without assigning motives. Motives cannot be inferred so rigorously but that the inference depends partly on *a priori* assumptions—one's general view about men and things. At the tribunal of history, historians must sometimes appear as advocates. It is a part which they may play usefully if the reader plays the part of judge. We trust that some of the Trade

Unionists who, as advertised by the publishers, have already bought up 19,000 copies of the History, will endeavour to " hear the other side " presented by historians comparable with our gifted authors in diligence and talent and the art of persuasion. Writers who fulfil these conditions are, indeed, not easily to be found.

The Economic Causes of War. By ACHILLE LORIA. Translated by JOHN LESLIE GARNER. (Chicago: Kerr. 1918. Pp. 188.)

THE first edition of this book was published in 1912 under the title *Les Bases Économiques de la Justice Internationale.* It was reviewed by Mr. Norman Angell in the ECONOMIC JOURNAL, 1913. A further notice is now called for by the addition of a substantial supplement on *The Lessons of the Great War.* The translator has adopted a title appropriate to the present form of the work. Indeed, the original title was not well adapted even to the first edition. The contents would have been better indicated by the title which Mr. Norman Angell suggested: *The Operation of Economic Factors in the Evolution of International Society.* In that evolution as conceived by Professor Loria there are three stages. First, economic relations give rise to international law. At a later stage international law breaks down under the strain of opposed interests; and still later it is rebuilt by economic influences. It is with the second and third stages that we are here concerned. The newly added supplement purports to be a verification of certain generalisations relating to those stages.

The thesis that wars are wholly due to economic causes has one of its ablest advocates in Professor Loria. It is impossible within our limits to do justice to the learning with which he supports this thesis. It must suffice to cite some of the instances on which he relies. " Most of the wars of Athens were caused by the necessity of securing additional lands." " In Rome the Third Punic War was merely a revolt of Latin property, determined to repair its diminished revenues." " The sole purpose of the Crusades was to increase the income of European feudal lords at the expense of the Syrian or Oriental revenue." " The struggles of Pisa and Florence, the Italian wars of the fifteenth and sixteenth centuries, were due to economic causes." " Holland's struggle for independence against Spain was in reality simply a privateering war on the Spanish merchant marine and the Hispano-American colonial trade." " The war of England against

Napoleon was merely a reaction against the Napoleonic conquests, which threatened British commerce." If the adverb " simply " and its equivalents were omitted, these propositions would appear less *simpliste.*

As the ancients attributed destruction and preservation to the same Power, so Professor Loria teaches that economic action, which at one stage is the sole cause of war, tends, at another stage, in various ways to establish peace. One way is presented by the analogy between industrial and international disputes. Workmen will accept an arbitrated decision even when it grants them an increase of wages less than what they might have secured by fighting, less by an amount less than the cost of fighting. Similarly " if the demands of the stronger State are represented by 1,000, and it appears to be in a position to obtain this by means of a war whose cost may be represented by 100, the arbitrators must allow him (*sic*) $900+d$; but if the cost of the war would be 300 (we omit some decimals) the arbitrators may grant him $700+d$ without any fear that the stronger State will reject the arbitrated award." Whence it follows that with the increasing cost of war the concession which must be made to force becomes smaller. The " zone of arbitration," in Professor Pigou's phrase, becomes smaller. Professor Loria has expressed with great clearness a conception which Professor Pigou had introduced (in his *Industrial Peace,* 1905) in a mathematical form. The conception has been employed by the present writer (in 1915) without acknowledgment, because without knowledge, of Professor Loria's work. We have not space to quote the passages which show that Professor Loria has a just sense of the differences as well as of the similarities between industrial and international disputes. (See his pages 151, 152, 154, 157.)

Among other ways in which economic influences tend to minimise war the " internationalisation of the Labour movement " is emphasised. There will arise among workmen of different nations " a solidarity which will constitute the strongest guarantee for international peace." But the author does not predict the total cessation of war—at least, while the present capitalistic system, with its so-called " forced association of labour " (pp. 132, 162, 179), perniciously persists.

Such are some of the generalisations which it is the purport of the new supplement to test. As to the economic origin of war, the writer finds that the statements made by him in 1912 have been confirmed by subsequent events. The Balkan war was fomented by foreign manufacturers of armaments. " Serbian

pork, Bulgarian wheat, and Greek commerce were the factors underlying the great and so-called religious movement against the Moslem." As to the European war, " the desire to find a lucrative employment for capital in new countries was the real underlying cause of the horrible conflagration," as pointed out by the *Economist* (November 1915). The testimony of Mr. Brailsford, of Pope Pius X., and other authorities to the same effect is cited. The author appears to attribute economic motives to the belligerents on both sides indiscriminately. He wrote his *Supplement* before the Americans came into the war, otherwise he would probably have adduced the Crusaders of the twentieth century as verifying his thesis : the sole motive for their intervention the desire for wealth ! But perhaps the thesis does not imply that all parties to a war on both sides are actuated solely by economic motives. We think that this implication, if not intended, should have been more explicitly disowned.

With regard to the deterrent effect of anticipated cost, Professor Loria dwells on the fact that the cost of the War has far exceeded the expectations of M. Bloch and other prophets. Yet, contrary to their expectations, the warring nations have not been soon exhausted. The enormous cost is, indeed, such as not to afford much prospect of " net gain " to belligerents, even if victorious, in future wars. Yet we may suggest that the difficulty of prediction evidenced by the anticipations about the present war is favourable to the spirit of gambling rather than the cool calculations of economic men.

How about the solidarity between workmen of different nations as a guarantee for peace ! What of the German Socialists enthusiastically voting military credits, eagerly supporting a war of conquest ! " The refutation of the theory," replies our author, " is merely one of appearance. For a long time the Socialist party in Germany—the same, moreover, as in other countries—has been anything but an expression of the wishes and interests of the proletariat; it has become the fief of certain party leaders . . . in other words, of a dissatisfied clique of the *bourgeoisie* who are adepts in securing snug incomes for themselves at the expense of their flocks." . . . " Projects for perpetual peace will be unrealisable Utopias until the artificial democracy by which we are ruled is displaced by a true democracy, an actual government by the people. . . . If the sceptre had passed to the costermongers, to the peasants, to the market women, we would have been spared this brutal carnage." So the Bolsheviks seem to have thought. Are they a " true democracy " ?

Principii di Economia Commerciale. By GINO ARIAS. (Biblioteca di Scienze applicati al Commercio.) (Rome: Societá Editrice Libraria. 1917. Pp. 948. Lire 25.)

THE Lecturer on Commercial Studies at the Genoese Royal Institute, and Professor of Political Economy at the University of Genoa has chosen a subject appropriate to his office and surroundings. The central part of the work—or at least that part in which the interest of the English reader will probably centre—is the sixth part, dealing with commercial policy. But apart from that main theme there are good discussions of various topics—much excellent fruit outside the kernel. The voluminous treatise contains matter of three sorts not often presented simultaneously—economic history and abstract theory in addition to commercial policy. The *millesima pagina* which according to Juvenal is characteristic of historical compositions is almost literally attained by a volume which comprises, besides history, two other ingredients abounding in a variety of topics.

In the first part of his work the learned author traces the development of exchange from its early obscure origins. He next surveys the economic regime of ancient India—the influence of caste, the various forms of interest—here, as with reference to other topics, including among his selected authorities what has been written on the subject in the ECONOMIC JOURNAL. Some aspects of commercial and retail trade in ancient Athens are presented with equal lucidity. Passing on to the Middle Ages, we are taught that the " just price " of Charlemagne's capitularies was the value determined by free competition in contrast to monopoly value. The conceptions of just price formed respectively by Albertus Magnus, Thomas Aquinas, Duns Scotus, and some minor doctors present interesting contrasts. In fine, the history of Genoese commerce leads to the conclusion that the earlier State regulation was in substance an insurance against the risk of dearth; when this risk had diminished, it was felt that the price of the insurance was excessive.

We do not feel competent to appraise these interesting contributions to economic history. With more confidence we can praise the *second* part, which deals with value and prices. In criticising this part of the volume the present writer is placed in the position of an examiner who finds in the work which he is examining repeated and appreciative references to his own writings. It is but human to be favourably impressed by such recognition. *Et sapit et mecum facit* is a very natural association

of ideas. Not that the critic always expresses agreement, but rather such dissent on minor points as to evidence an independent judgment and so to enhance the value of his appreciation. Thus, referring to the ECONOMIC JOURNAL, Vol. XXI. (1911), he admits that the principle of monopolistic discrimination resulting in benefit to consumers may play a large part in modern industry. But he will not admit that the principle is relevant to a Socialistic regime (*loc. cit.*). For "in a Socialist administration there is not and there could not be a monopolist such as we now conceive."[1] Which is, of course, true of ideal Socialism. In all such discussions much turns upon the degree of abstraction presupposed. Perhaps we may thus explain Professor Aria's seeming dissent from the views expressed in the ECONOMIC JOURNAL (Vol. VII. p. 403, VIII. p. 234, IX. p. 286, X. p. 288) as to the tendency of a specific tax to raise the price of a monopolised article. We are quite at one with our author as to the decisive importance of future interest on the motives of the monopolist (Arias, p. 137, ECONOMIC JOURNAL, Vol. XII. p. 512). As to transactions between two monopolists, the so-called "duopoly," Professor Arias, in support of the present writer's view, contends that it is not fair to "introduce extraneous elements" into the data (Arias, p. 139). Here and elsewhere he shows a just appreciation of the "divergence between the abstract representation and the concrete phenomenon" (p. 149). It is not the fault of theorists, "*i maggiori teorici*" at least, if others, "*oltrepassando il pensiero dei maggiori,*" do not take account of this divergence.

With such just views as to the function of abstract theory, it is remarkable that our author should demur to Professor Marshall's doctrine of compromise benefit (to monopolists and consumer). This bold (*ardita*) abstraction seems to Professor Arias too far removed from reality (p. 121). "The monopolist cannot and does not value quantitatively the benefit of the consumer at different prices." Equally surprising seems the criticism of another among "*i maggiori,*" Sir H. Cunynghame, with reference to the expediency of an export law (p. 177). "These purely quantitative contentions (*raffronti*) are not an infallible guide." *Quis negavit?* The objections to Mr. Bickerdike's doctrine of incipient taxes (propounded in the ECONOMIC JOURNAL, Vol. XVII.; analysed by the present writer, Vol. XVIII.) appear similarly otiose. The paradox that the advantage generally obtainable by a small import tax tends to be greater (*sic*) when the tax is protective is combated by arguments which are indeed agreeable to

[1] See above.

common sense and are valid against the statement as it presents itself to the lay reader, but do not touch the theorem as understood by the mathematician.

We have not space to follow our author through the wide range of subjects as to which he displays a minute acquaintance with contemporary writings. His generous recognition is often tempered with gentle criticism. Thus Mr. Keynes is praised for "some truly profound pages" on the discount policy of banks. But the author adds: "*Il Keynes peró non è a mio avviso perfettamente nel vero.*" So with respect to railway rates the "perspicuous thought" of Professor Ripley leads to conclusions that are "not quite acceptable" (p. 813). Plunging into the controversy between Professors Taussig and Ripley about "joint costs," Proessor Arias finds that the very acute English writer through excess of subtlety deviates from the truth (p. 825). The general impression produced on us by this elaborate criticism is that the Genoese students of political economy are singularly fortunate in their teacher. One who has read almost everything that has been written on each subject, and has marked what he considers amiss in each writing, who is ready to compare and correct the theories of his contemporaries, must prove a most effective and stimulating instructor. Maturer students may perhaps find that the judgment which they had formed on each question is not materially altered by the new dialectic; but this circumstance does not detract from the educative value of these critical expositions.

This general character appears to apply to that part of the work which is specially concerned with the controversy between free trade and protection. The cruder presentations of either doctrine are ably criticised. If any free trader is foolish enough to argue that, because Italy relaxed protection in a certain year and enjoyed prosperity in subsequent years, *post hoc* is *propter hoc*, he may be convinced of his error by our author's sound logic (p. 772). It is good also for extreme protectionists to learn that there have been "deplorable exaggerations" on their side (p. 794), that *in general* it is the better course to leave to customs tariffs a purely fiscal function (p. 179). Coming nearer to practical issues, we think that our author has made some contribution (p. 605) towards the definition of "dumping"—dumping of the malignant sort, against which it is generally agreed that some protective measures may legitimately be employed. He well distinguishes the phenomenon of plural price which is an incident of monopoly and joint production from penetration in a political

interest as practised by the Germans. But there still remains the difficulty of proving that in any given case the more dangerous kind of dumping is present to a serious extent. For example, with respect to Italy before the war it is not enough to say: "The importation of machines represents for Italy an annual tribute of more than 200 millions [of francs] due to a foreign industry." Professor Arias, indeed, says more than this, but he does not in our judgment adequately counteract the presumption that to obtain a large addition to the means of production is advantageous. Before accepting him as a guide we should require more information about particulars. Consider, for instance, the following contention (p. 795): "A nation is an *historical* category. National interest (*convenienza*) has necessarily an historical character, is not immutable, but continually changeable, is complex and inseparably compounded of multiple elements," and so forth. With respect to such propositions one may sympathise with that cautious student of whom it is told that he would not assent to the axioms of Euclid until he knew what use was to be made of the admission.

Theoretische Sozialökonomie. Von GUSTAV CASSEL. (Leipzig: Winter. 1919. Pp. 582.)

"A SORT of scientific poem"—in these words the *Méchanique Analytique* of Lagrange was described by one who was a poet as well as a mathematician, William Rowan Hamilton. The words serve to introduce an essay in which Hamilton, by a singularly beautiful and original conception, enlarged the powers of dynamical science.[1] In the view of that soaring genius astronomy and mathematical physics generally require the exercise of a faculty akin to the artistic imagination. There is produced "an imitation, not a copy, of Nature. It is a creation of the mind so framed as to resemble in an immense number of particulars what we know of the external universe."[2] To some men of science this view may appear visionary; too much in the spirit of Plato, too little in the manner of Bacon. There appears, indeed, to be some disagreement among "the first of those who know" as to the rôle of the highest generalisations even in natural philosophy. How much more difficult to find must be the path to a science of human action! In this obscurer region we are disposed to

[1] *On a General Method in Dynamics*, Transactions of the Royal Society, 1834.
[2] Transactions of the Royal Irish Academy, 1837–8.

follow one who, accredited by the successful treatment of several special economic questions in former writings, now delivers his mature judgment about the science as a whole. Professor Cassel appears to us to have remarkably well defined the province and limits of abstract general reasoning in economics. " We proceed like the astronomers who first determine the motion of a planet as if it were not influenced by the other planets . . . afterwards take into consideration the disturbances caused by the other planets. . . . In order to be able to pursue this method one must be assured that the motion first described represents the essential portion of the phenomenon " (*dass die erste Bewegung auch die wesentliche darstellt*) (93).[1] So Ricardo is not to be condemned merely because a theory of his does not perfectly correspond with the observed facts. " Every theoretical investigation must begin with certain abstractions " (263). A good instance of appropriate abstraction is afforded by the conception of production as a continuous flow. " New iron ore and new coal are daily and hourly requisitioned from the store-houses (*Fundstätten*) of Nature, while simultaneously crude iron is furnished in a steady stream and converted into steel, and the various products of steel and iron are passing through all the stages which lead up to the finished article " (21). This description is *prima facie* inappropriate to agriculture. Certainly we do not find in modern Europe, as in the Homeric Phæacia, every fruit in season all the year round, " pear ripening after pear . . . and fig after fig." Yet " the European demand for wheat is (or rather was when this was written, before the war) satisfied by a practically continuous stream of imported wheat throughout the whole year with considerable regularity." Corrections of this conception are to be introduced where required by the facts. But in order to obtain a first general view of essentials " it can hardly be doubted but that the continuous process of production . . . is *the right abstraction* " (22). The italics mark our approbation. But we do not commit ourselves to acceptance of every proposition which has " right abstraction " for predicate. Thus with regard to the alleged unequal pay to women for equal work and the question on which the author pertinently puts his finger, Why, then, does not the entrepreneur more extensively substitute female for male labour ? we are not quite satisfied with his answer. He puts forward as the dominant circumstance the real, or at least believed, inferior efficiency of female work. He will not accept the " risky hypothesis " that in general female labour is underpaid (294). Again, we question whether his conception of

[1] The bracketed numerals refer to pages of the work reviewed.

the rôle of money, or at least what is novel in his conception, deserves all that he claims for it. "By studying prices rather than value" (*eine Preislehre anstatt einer Wertlehre*) "we shall banish completely from economic science the whole of the so-called theory of value. We shall altogether get rid of a great mass of logomachies on which now much useless labour is spent" (41). We shall here diverge from his treatment of money so far at least as to think it permissible to discuss his first two "books," entitled respectively *A General View of Economics* and *The Determination of the Prices of the Factors of Production*, apart from the third and fourth books on *Money* and *Crises* (*Konjuncturbewegungen*) respectively. The work having been already reviewed as a whole in the ECONOMIC JOURNAL (1919), we take leave to concentrate attention on the parts to which the reviewer pointed as "of special interest for English economists."

This half of the work may indeed be regarded as a whole complete in itself. The relation of its parts to this whole is artistic. The refined pleasure of contemplating the Many in One is afforded by the spectacle of the economic system—the prices of all commodities and all factors of production—deduced from one single simple principle, that which underlies the action of supply and demand. May not the mechanism of industry so presented deserve the character of a "scientific poem" which has been attributed to celestial mechanics? We might at least compare our author to a first-rate astronomer who should compose a treatise at once summary and comprehensive presenting in lucid order and due perspective the main results obtained by his predecessors and by himself. In such a work it is inevitable that those who are conversant with the science should find much which has not the charm of novelty. Now we are treated to a mathematical analysis of market in the manner of Walras, with "technical coefficients" which correspond to the coefficients of production proper to the Lausanne school (110–116). Now we come upon the doctrine of Dr. Marshall that "the farmer will lay out capital and labour on land for which a fixed rent (per unit of land) is payable up to the point at which it is indifferent whether a specified sum of money should be employed to procure the use of more land or more capital and labour" (242). The maturer student would be assisted in finding his way to matter of fresh interest by a fuller table of contents and by a logically constructed index. We may also recommend, with a view to a translation into English, which we hope is in contemplation, the useful device of marginal headings. As for beginners, the matter as

well as the form will prove acceptable to them. The half-volume under consideration, with the omission of certain passages which we shall indicate, may be recommended as perhaps the best introduction to what may be called the modern higher economics.

The perfection of form which we admire, the conception of the economic system held together by a single simple principle, like the solar system by gravitation, would seem to us even more admirable if the author had employed a more conventional terminology in his enunciation of that first principle. The continual use of the term " scarcity" (*Knappheit*), where supply-and-demand might have been expected, jars (3, 120, 289, *et passim*). Of course, scarcity is a condition of value-in-exchange. We all know that air and water, if not scarce, have not that kind of value. Moreover, a sort of scarcity is implied in the condition of economic equilibrium that the yield of any factor at the margin of production should increase at a decreasing rate. But our author has not much use for margins. He is so afraid of their abuse (118). Marginal productivity is not to be adduced as an *explanation* (*Erklärungsgrund*) of price (272). For it is as much an " unknown " as price. But *quis negavit?* At least, what mathematical economist ever denied this relation of margin to price? What competent economist of any school can deny it after the repeated and explicit explanations given by Dr. Marshall that " marginal uses indicate but do not govern value " (Contents, and corresponding passage at p. 410, *Principles*, 5th ed., p. 517, note, *et passim*)? The usefulness of this index, in our judgment, outweighs the danger of its abuse. The fear of making the weak brother to offend should not deter us from using the principle which Professor Pigou has laid down as the corner-stone of *Wealth and Welfare*. Professor Cassel's scruples and our criticisms apply equally to marginal utility (118). There is here in his view the additional objection that we are overstepping the boundary between economic science and psychology (67). But we do not accept his ruling as to the limits of the subjective in economics (41). Taxation is an integral part of economics; and psychology enters largely into modern taxation. We are not prepared to rule out all talk about justice as the " expression of confused hyperbolical conceptions which have no place in a scientific exposition " (150).

Some further criticisms of Professor Cassel's doctrines will transpire in the course of the following remarks respecting criticisms which he has passed on several eminent economists. We

cannot defend Ricardo against the charge of "dualismus" (263). We agree that the existence of rent-free land at the margin of cultivation is not essential to the theory of ground rent (248). We also agree as to the distortion of Ricardo's doctrine by Marx; and as to "the ridiculously exaggerated importance which has been attached to this Socialist theory of value," not only by the apostles of Socialism, but by its opponents (261). A science which makes concessions to scholastic like that of Marx does not know what is due to itself (157). Two English Socialists who have not bowed the knee to Marx, "*das Ehepaar Webb*," are treated more respectfully (277). But their ideal theory can hardly be fulfilled perfectly in real life (278). Against Socialists in general it is argued with force that interest and wages will persist in a Socialist regime (217, 316). The writer appears to think that price determined by the play of demand and supply affords the only satisfactory principle for the distribution of capital and labour (61, 185, 109). Consistently he rules out rationing and maximum prices as not applicable in peace time (Appendix, 561). His ideal seems to be that which Professor Carver lately described [1] as one of four possible labour programmes, namely, "balancing up," securing less inequality between marginal utilities, *e.g.*, of labour and capital. We fear that the many will not be persuaded to confine themselves to this method. They may not accept the economist's opinion that permanently favourable results can only be attained by political economy when it works in harmony with the principles of supply and demand (*tauschwirtschaftlichen Principien*) (151). The working of those principles, however "normal," may not seem to them "desirable" (*wünschenwert*) (105). In this connection (221) and generally the subtle criticisms concerning capital and interest deserve attention. Some important remarks upon Jevons's and Böhm-Bawerk's theories are repeated from the author's earlier work on the *Nature and Necessity of Interest* (160). We cannot dispute the final verdict on Böhm-Bawerk. "He never was able to adopt in its entirety the modern scientific conception of price-determination as one and the same process which simultaneously determines *all* prices, both those of the finished goods and those of the factors of production" (162).

But we protest against the injustice of imputing a similar defect to the *doyen* of English economists. Why, most of us have learnt the "modern scientific conception" from Professor Marshall. There is no other original authority, except Walras. We read, therefore, with amazement that "the whole of Marshall's

[1] Referred to ECONOMIC JOURNAL, Vol. XXIX. p. 257.

system is an attempt to evade (*umgehen*) the principle of scarcity" (*Knappheit*,) to eliminate (*auszuschalten*) scarcity "as a determining moment of price-formation" (139). Which signifies, presumably, that the English author does not recognise the essential unity of the process that determines all prices. Thus, instead of making the price of a factor-of-production dependent on *Knappheit* only, "in Marshall's conception 'costs' ('real costs') represent a personal service, an effort, a sacrifice" (*eine persönliche Leistung, eine Anstrengung, eine Aufopferung*) (75). It may be noticed, however, that even Professor Cassel admits a certain differentiation of the generic conception in the case of the offer of factors-of-production not absolutely limited in quantity; the scarcity appears in the sluggishness (*Trägheit*) with which the increase of the factor follows a rise of price (134). Would he be satisfied with Dr. Marshall's explanation that the "discommodity of labour may arise" "from its occupying time that is wanted for pastime, or for social or intellectual pursuits" (*Principles*, 3rd ed., p. 216)? Or is the real cost considered too psychological? That is certainly part of the objection to "consumer's surplus" (70). We have already replied to this objection. We must pass over others which seem to turn largely on the definition of terms. We go on to the culminating charge (243), that Marshall follows Ricardo in distinguishing rent from the price of other factors of production as not forming an element in the cost of production or the price of a product. Perhaps the critic has not made sufficient allowance for the English writer's unwillingness to break with the phraseology of his classical predecessors. Professor Cassel is the last man to appreciate this reverence for the past; he who tells us that "in the course of his economic studies he soon became convinced that the whole of the so-called theory of value, with its endless logomachies and its unfruitful scholastic, should be thrown into the waste-paper basket of theoretical economics" [1] (Preface, v, *cp.* 41). The Swedish sage would no doubt refuse to phrases the permanence which Burke in eulogy of the English character claims even for prejudices. "Instead of casting away all our old prejudices," says Burke, "we (English) cherish them to a very considerable degree. . . . Many of our men of speculation, instead of exploding general prejudices, employ their sagacity to discover the latent wisdom which prevails in them." [2] We could wish that Professor Cassel had employed his sagacity in discovering the wisdom which is latent in the practice of the classical economists

[1] Zu der auszumusternden Ballast der theoretischen Ökonomie gehört.

[2] *Reflections on the French Revolution.*

and patent in Dr. Marshall's repeated explanations respecting the peculiarities of land as compared with other agents of production. But we are dispensed from the disagreeable task of refuting objections founded on misinterpretation by recalling that answers have already been given in the ECONOMIC JOURNAL to substantially identical objections made a quarter of a century ago by writers of great intelligence, but somewhat deficient in intellectual sympathy. We may refer in particular to the review of Wicksteed's *Laws of Distribution*, 1894. In the judgment of the reviewer, Mr. Flux, "to show that the payment for land may be expressed in the form of the marginal productivity of land does not destroy the value of the conception of it as a surplus." There is an "essential feature which distinguishes the treatment of land and some other agents." In the ECONOMIC JOURNAL for 1891 the reviewer of Professor Marshall's second edition did not, like our author, find a want "of clearness in Marshall's conception of mutual dependence." [1] Rather, it is recalled that as far back as the year 1872 the principle had been clearly enounced in these words—quite as clear as any which Professor Cassel employs half a century later: "Just as the motion of every body in the solar system affects and is affected by the motion of every other, so it is with the elements of the problem of political economy." The reviewer of the third edition of the *Principles* in the Journal of 1895 quotes at length passages embodying the truth which Professor Cassel supposes to be ignored. "The question whether he (the cultivator) has carried his cultivation of a particular piece of land as far as he possibly can, and whether he should try to force more from it or to take on another piece of land, is of the same kind as the question whether he should buy a new plough or try to get a little more work out of his present stock of ploughs" (*Principles*, Book II. chap. ii. § 5, 3rd. ed.). After this explicit explanation it becomes a mere question of words, adds the reviewer, whether we should retain the old formula: "Rent does not enter into cost of production." The critics who complain of Dr. Marshall's differential treatment of land forget that he, by his doctrine of the "margin of building" and that of cultivation, has done more than any other economist to exhibit that truth on which they insist. Their criticisms attest the correctness of their own views rather than their ability to appreciate the views of others.[2]

[1] "Die Unklarheit der Marshallschen Idee der gegenseitigen Abhängigkeit tritt hier hervor" (245).

[2] Some of these expressions are borrowed from the present writer's article on the "Theory of Distribution," in the *Quarterly Journal of Economics* for 1904, where references to anticipations of Prof. Cassel's objections may be found.

The Revival of Marxism. By J. SHIELD NICHOLSON, Sc.D., LL.D., Professor of Political Economy in the University of Edinburgh. (London: Murray. 1920. Pp. 145.)

Karl Marx. By ACHILLE LORIA. Authorised translation from the Italian with a foreword by EDEN and CEDAR PAUL. (London: Allen and Unwin. 1920. Pp. 92.)

WE have much sympathy with those who hold that the theories of Marx are beneath the notice of a scientific writer. However, the refutation of prevailing fallacies has always been recognised as part of the economist's province. It is indeed a peculiarity of our science that its investigations generally start from a point which is, so to speak, behind the zero of ignorance. It is necessary to escape from error before reaching positive truth: "*Sapientia prima stultitiâ caruisse.*" Accordingly, gratitude is due to Professor Nicholson for having performed the heavy task of re-examining *Das Kapital* and other writings of Marx. The judgment which many of us have been content to base on samples of this literature is now confirmed by a more thorough examination. Professor Nicholson entered on the task prepared to find, as in the writings of Robert Owen and many other Socialists, some ideas that might be of service under present conditions. "But the more I read of Marx," reports the critic, "the more hopeless and depressing was the effect." "The theory of value as expounded by Marx, instead of being an advance, is a retrogression." He neglected the influence of Demand which contemporary economists were bringing into light. Another novelty which the same writers favoured, the use of mathematical conceptions in economics, might seem at first sight to have been adopted by Marx. But we agree with Professor Nicholson in thinking that the mathematical apparatus in *Das Kapital* "is on par with the maps and charts and ciphers put into the novels about the treasures hidden by pirates. The algebra of Marx compared with the algebra of Cournot . . . is as the charts of the pirate romance compared with the charts of the Admiralty." Professor Nicholson's searching criticism of Marx's theories on wages, profits and the accumulation of capital fully justifies his verdict that "what was original in Marx was wrong." No less searching and severe criticism is bestowed on the writings of Marx's most important disciple, Lenin. The divergence between Lenin and other disciples in their interpretations of the master's

teaching is strikingly exhibited. It should seem that even the humble merit of consistency was wanting to Marx.

Any shred of authority that Professor Nicholson may have left to the author of *Das Kapital* disappears in Professor Loria's treatment of the subject. With respect to two leading tenets of the Marxian system, Professor Loria thus expresses himself: "Marx's thesis of the progressive concentration of wealth into the hands of an ever-diminishing number of owners . . . has not been confirmed. It has indeed been confuted by the most authoritative statistics collected since the publication of the book." As for the theory of surplus value stated in the first volume of *Das Kapital*, it is "peremptorily refuted or is reduced to absurdity." It was announced by Engels, and it was confidently anticipated by faithful Marxists, that the explanation of the enigma, left unsolved in the first volume, would be found in the long-expected third volume. But of the explanation there offered Professor Loria observes: "It soon becomes apparent that this so-called solution is little more than a play upon words, or, better expressed, little more than a solemn mystification. . . . Thus, far from effecting the salvation of the then threatened doctrine, this alleged solution administers a death-blow and implies the categorical negation of what it professes to support. For what meaning can there possibly be in this reduction of value to labour, the doctrine dogmatically affirmed in the first volume, to one who already knows that the author is himself calmly prepared to jettison it? . . . His fundamental economic theory is essentially vitiated and sophistical." If we knew nothing about Marx but what we are here told, we should infer that he failed in two prime tests of scientific worth, prediction of the unknown and explanation of the known. The serenity of the scientific character was not among his qualities. Thus, of "the savage booklet entitled *Herr Vogt*," we read: "The style of this polemic writing is intolerably vulgar." A character "naturally acerb" became, under the pressure of adversity, "far from amiable." "Mingled sentiments of grief and anger fill our minds when in Marx's private letters to Engels we trace the manifestation of this harshness, which left him unmoved by the misfortunes of his dearest friends, which led him to make any use he could of those friends and then to overwhelm them with reproaches and accusations, which showed itself (and this is the worst of all) in a jealous hatred of comrades less unfortunate than himself." Particularly deplorable was his ungrateful conduct towards Lassalle, who had shown him great kindness, assisting him financially and in other ways. This

adverse testimony obtains additional weight when it is observed that the witness is an enthusiastic admirer of the man whose defects he candidly admits. The countervailing merits attributed to Marx are extolled in encomiums of almost lyrical profusion, the beauty of which has been preserved by the translators as well as the English language permits. *Das Kapital* is described as "the marvellous work which, whatever judgment we may feel it necessary to pass upon the value of the doctrines it enunciates, will remain for all time one of the loftiest summits ever climbed by human thought, one of the imperishable monuments of the creative powers of the human mind. . . . The most austere criticism must bow reverently before such gigantic mental attainments as have few counterparts in the history of scientific thought." Space fails us to transcribe all the eloquent eulogies of the "sage" and "martyr" "who struggled and suffered and died for the Supreme Redemption."

It is a psychological question, of some practical importance, how the same mind could hold at the same time with respect to the same person judgments so different as those which we have cited. The contradictory utterances recall the character of *Dipsychus* as described by the poet Clough. The history of religious rationalism presents few such examples of fervid faith combined with critical reason. The nearest parallels are perhaps to be found among the worshippers at the shrine of Marx. Thus Professor Sombart, along with profuse eulogy of Marx, makes the admission that he contributed nothing to the technique of the science (*cp.* ECONOMIC JOURNAL, Vol. XIX. p. 239). The importance of Marx's theories, is indeed, as Professor Nicholson shows, wholly *emotional*.

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The Roman numerals designate the volume, the Arabic numerals the page to which reference is made. The number of the page sometimes indicates the beginning, sometimes an essential part of a passage. The word placed in the index will not always be found in the passage referred to; only the subject to which the word relates is to be looked for.

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